

# The Week

- HOME**
  - Research group calls for new university funding system
  - University ordered to reinstate scientific officer
  - Closure threat to Newcastle college
  - Students renew campaign for higher grants
  - Union calls for right of veto on academics' consultancies
- NORTH AMERICA**
  - Students campaign against cuts in federal aid
  - How Illinois is coping with President Reagan's cuts
  - Sex bias dispute lingers on at Harvard
- OVERSEAS**
  - Australian standards will be hit by university deficits
  - Maolst wins Irish students' presidency
  - Polish president urges "independent" thought
  - Too many graduates for jobs in West Germany
  - Spain reforms universities by decree
- ARTICLES**
  - Paul Father reports on the results of a THES survey of the state of social sciences in the universities, 7
  - The teaching function: full report and summaries of the papers given at the sixth Leverhulme seminar, 8-10
  - John Field criticizes the obstacles placed in the way of the historian by excessive official secrecy, 11
  - K. G. Mathieson discusses the relationship between science fiction and the mainstream of literature, 12
- ARTS**
  - Ray Desmond reviews the India Observed exhibition at the Victoria and Albert, and Trevor Cooper reviews the National Student Drama Festival, 14-23
- BOOKS**
  - P. M. Williams reviews a new study of American politics by Samuel P. Huntington, 14
  - Patrick Collinson discusses a biographical dictionary of the Elizabethan House of Commons (15), Robert Suggs reviews The Strategy of Equality by Julian Le Grand (16), Maurice Holt reviews Helen Gardner's Charles Eliot Norton lectures (17), and Brian Charlesworth discusses The Extended Phenotype by Richard Dawkins (18)
- PHILOSOPHY**
  - W. E. Walsh reviews a new edition of Ernest Cassirer's study of Kant, 18
  - Aristotle, Hobbes, morality, late medieval philosophy, Wittgenstein, and scientific explanation are among the subjects of new books in philosophy
- NOTICEBOARD**
  - CLASSIFIED INDEX
- OPINION**
  - Tessa Blackstone asks why public services in Britain have to be so bad; Robin McKie discusses an American hoax about cloning; and Don's Diary from Peter Heymans of the Lebanese University in Beirut, 30
  - Letters on the arts and student grants; and Alec Thompson of Nalgo emphasizes the justice of pay claims by non-teaching staff in "Union View", 31
- Next Week**
  - The dinosaurs of culture? Anthony Smith begins a series on institutions of national culture
  - M. W. Flinn on the Highland clearances
  - Peter Klepac on America's last two decades
  - New books in chemistry
  - Paisley College profile



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## We are all teachers now

The business of teaching is arguably the most important yet least discussed major aspect of higher education. Certainly, it receives only a fraction of the attention it deserves both within most institutions and in wider debate. The vogue is for organizational questions which set the scene for the practice of higher education, rather than the less dramatic matter of just how best to communicate information and stimulate the student to achieve his or her full potential.

Even at the Leverhulme/Society for Research into Higher Education seminar on the teaching function this trend was in evidence. There was less demand to attend the seminar than for most others in the series and there was a marked tendency for discussion to slip on to the future of the binary system, the practices of the University Grants Committee or the prospects for the National Advisory Board.

The majority of academics, like all those at the seminar, are convinced of the importance of good teaching standards and many are prepared to admit current shortcomings, but there is little agreement on the route to significant improvements. Yet this era of cuts in education spending makes progress not only desirable but essential. Since staff are at once the most expensive and (especially in the public sector) the most easily disposable resource, there is little doubt that staff-student ratios will worsen during the remainder of the century by a wide margin: the ratios are among the most favourable in the world and could be modified without causing irreparable damage. But if this is to be the case, every effort will have to be made to update and improve teaching techniques.

Such has been the level of disinterest in teaching within higher education that there is little reliable evidence on which to base judgements of quality. However, there is a widespread belief that considerable scope exists for improvement. The National Union of Students has complained for some time about lecturing standards, albeit with mainly anecdotal rather than scientific evidence. To dismiss their claims as unproven would be too easy, especially when almost all graduates have their own horror stories to tell about a lecturer or lecturers. It is a fortunate department which can claim with confidence to have no poor teachers.

For those who may be complacent, an examination of recent events in Italy may prove salutary. There failed 5,000 university staff have teaching "satisfactory" tests based on exercises in, now shrouded in controversy amid allegations of corruption and legal proceedings, no one is denying that a considerable degree of unsatisfactory teaching has been revealed.

Any generalization about the state of the art in Britain is obviously fraught with dangers and is bound to be unfair to the many academics who do not fit into the accepted norms. If such exist, vastly different techniques are required: both according to subject and type of student. Comparing education, for example, employs quite different methods to those common on full-time courses, though each may have something to learn from the other. It is probably also true that there is less concern over standards in laboratory teaching or in higher degrees than over the orthodox lecture and seminar work of the classroom-based first degree.

Even in this area there will always be good and bad institutions, efficient and inefficient departments. But often it is the least prestigious



institutions which pay the most attention to teaching standards. The existence of the Council for National Academic Awards takes some credit for this, since even the infrequent assessment of courses it is able to undertake does have some impact. Where there are traditional links with the practice of teaching and a low level of research it is also natural that contact with students and the art of lecturing should take on greater significance.

This is as it should be since, to compare extremes, the academic high-flyers of Oxbridge should be in less need of painstaking instruction than those students who achieved the bare minimum qualifications necessary to enter a degree course at a college of higher education, let alone the unqualified mature students who are already numerous in the public sector. Nevertheless, such students are likely to become more common in the universities in the years ahead and there must be a question mark over ability of all staff to do them justice. It has always been too easy for an inefficient lecturer to slip through the employment net and not only to hold down a job but even to move up the promotion ladder if he or she is a talented researcher. The claim that the two talents necessarily go together is both unproven and unlikely.

Incentives, either in the form of salary increments or as currency for promotion prospects, are also worth considering and should not be dismissed because of an assumed restriction which would arise in finding accepted and effective criteria on which to base rewards. The intention, after all, would be to produce better lecturers, not simply better qualified staff.

For the most part, the route to improved standards would appear to lie with relatively minor organizational changes and more major change in attitude. While the bulk of academics continue to regard staff development as an intrusion and educational theory as irrelevant, there can be little progress. Yet well directed fine tuning of the system could have just as impressive results as the establishment of new grant-aided bodies. The idea of an ombudsman to investigate complaints about lecturing might be worth exploring for instance, although it would be an unenviable post to fill and it would be difficult to persuade institutions to create such a job while in the throes of contraction.

Immediate progress could be made by the extension of the practice of peer review, especially in the universities. The University Grants Committee could take over the role performed in the public sector by the CNAEA, or individual universities could set up their own systems. Chelsea College discovered in the process of the unique peer review it commissioned to clear its own name that there is less to fear and more to be gained from outside criticism than would be imagined. Those involved in passing judgment also found the exercise a rewarding one and some have said that their own teaching has improved as a result.

Such innovation, together with increased attention to the possible uses of new technology and greater recognition of the benefits of staff development might well bring about the substantial improvements in teaching standards which increased pressure from spending cuts will demand. British higher education will then have some excellent teaching and some mediocre. Academics should not be afraid of the political consequences of admitting that there is more to be done in some areas; it would be more a matter for censure if superior standards when remedial measures were feasible.

Laurie Taylor



"Ah Gribbins. There you are. Glad to see you. I've been your notes all term. They disappeared off the floor last night."

"Oh no, sir. I've been here. Had a big operation on my teeth. I sent you a medical certificate three weeks ago."

"Look Gribbins. Forget the operation. None of us is perfect. It's just that you got the end. Right?"

"Yes sir."

"Now the reason I want you is quite straightforward. You got our examiners meeting up next week's time, and it's possible that if you turn up on the borderline, we may need a jolly old glance at your record. Understand?"

"Yes indeed, sir."

"So I just wanted to see your reports with you. See more or less cover the facts and then we can write a summarizing statement for the meeting. OK Gribbins?"

"Yes, sir."

"Something the matter with your mouth, Gribbins?"

"Er, not really, sir. It's just that..."

"Don't mutter that. Give me an impression to prospective employers. Now let's have a look at your 'satisfactory' report. Get up and over the page here. 'Satisfactory' for methods. And 'satisfactory' for your work. So not a bad start at all."

"No, sir."

"But then things really seem to go off the top in the year, don't they? As though you decided to take a bit of a holiday?"

"I see, for example, that second year tutor says 'satisfactory' for methods. And also, I see, beginning of the year you can't get up the theory more than 'satisfactory' thing honestly there's no way of telling elsewhere. Only 'satisfactory' for your opinion."

"Yes, sir."

"Well no good crying over the milk. Water under the bridge for the third year. Nice sort of picture there. A good, clear 'satisfactory'. And also, I see, beginning of the year 'satisfactory' for your work. No problem in the course either. 'That's a 'satisfactory'. All in all, 'satisfactory'."

"Thank you, sir."

"It's an interesting thing you didn't really build up your 'satisfactory' second year work up to the 'satisfactory' level in the final stages."

"Yes, sir."

"D'you know what I'm going to do with you, Gribbins?"

"No, sir."

"I'm going to overlook your work at the beginning of this year and give you a chance with you."

"Thank you, sir."

"I'm going to put you on 'satisfactory'. Now don't let me hear of any more 'satisfactory' will you?"

"No sir. I'll do my best."

# The Times Higher Education Supplement

June 18, 1982 No 502 Price 45p

- Eric Lynn on the neutron, 11
- Peter Abell on Thomas Kuhn, 17
- Commonwealth contraction, 14
- Research after Merrison, 8

## Children outgrow their home

A £2m appeal has been launched for a new international centre for child studies to develop the work of Bristol University's department of child health, which has outgrown its accommodation.

The 50 staff of the department will remain as employees of Bristol University, but the ten core staff of the new building within the university precinct, which may cost up to £2m will also be financed from private sources.

The centre will study child development as a whole, involving inter-disciplinary research in health, education and social sciences. Scientists from 35 countries are supporting the appeal.

Head of child health, Professor Neville Butler, who will become director of the centre, said: "It was impossible to expand what we were doing within the university structure. We are studying education and sociology, yet we are in fact part of a medical faculty."

Research will continue to be funded by Government departments. This year, the Bristol child health department will receive £140,000 in research grants from the health and education departments and this figure is expected to rise to £200,000 within five years.

Much of the Bristol department's work is concerned with a life-long study of 15,000 children - all the British children born in a single week in 1970. Studies of the entire sample which includes 400 children in care, have been carried out. When the children were ten, all were given up to 12 hours of tests.

Professor Butler emphasizes that the centre will not be an academic institution. "We are interested in the transition between child normality and handicap, and our projects are designed to pick up indications before the crisis point."



Professor Butler gets down to some practical work

## Equal misery policy on budget cuts

Cuts in higher education spending over the next three years are to fall roughly equally on voluntary and maintained institutions.

Provisional figures show near static budgets for the two main sectors but no additional allowance for inflation.

The new figures, contained in recent letters to the National Body and the University Grants Committee, are the first to separate spending on the different areas of higher education beyond 1982-3. They also allow for an increase of less than 2 per cent on student awards, but lower student numbers should produce a higher increase in grants than this implies.

Ministers agreed to the proposed distribution on the basis that it was consistent with their policy of a 10 per cent cut in higher education spending between 1980-1 and 1984-5. But inflation could increase the planned cut over the remainder of that period.

They also decided to maintain their predecessor's policy of even-handedness between the sectors despite pressure to favour the universities. A desire to give the newly-established NAB an opportunity to take stock of the system in a reasonably steady state is understood to have been an important factor in deciding against a change.

Mr Christopher Ball, chairman of the NAB board, said that he was very pleased that even-handedness was to be retained, although he had not had an opportunity to study the figures. "We would certainly hope to be consulted in detail and given an opportunity to comment before that policy was abandoned," he said.

The allocations brought the first signs of strain in the relationship between NAB and the UGC. Civil servants refused to reveal the universities' budget on the grounds that it was confidential to the UGC, which did not immediately reveal the size of its allocation.

In fact, the UGC's provisional budgets are not directly comparable with the forecasts contained in April's Expenditure White Paper, but its allocation for 1983-4 is put at £1,180m rising to £1,240m in the following year. This compares with a budget of £1,187m for the academic year 1982-3.

Mr Edwin Appleyard, assistant secretary of the UGC, said the new figures represented level

## Training college to close

by Patricia Santinelli

Governors of St Mary's College, Fenham, Newcastle announced this week that the college is to close in 1985. It will be the first to cease teacher training since the mid-1970s.

The decision to close St Mary's, a Catholic college which is almost entirely devoted to teacher training and won a surprising reprieve in 1976, is due to low recruitment and changes in funding.

The college which has an annual target of around 300 students has been hit by low recruitment for its BEd and only recently announced that it would discontinue recruitment from 1982.

The decision by the Department of Education and Science to introduce a new funding approach for voluntary colleges from 1983/84 will mean fierce competition for scarce resources.

The Catholic Education Council joint administrators of the college with the Society of the Sacred Heart says that the combination of these two factors forced them to decide on closure. It stresses that the future of other colleges is secure.

However Sister Margaret Nourse, principal of St Mary's, believes that the new funding approach and recommendations made by the Advisory Committee for the Supply and Education of Teachers to boost primary and cut secondary teacher training, will lead to further closures.

Small institutions such as St Mary's whose main work is in secondary teacher training and which are unable to diversify are extremely vulnerable, she said.

According to a DES spokesman, the closure is purely due to continued low recruitment. The department has always been reluctant to accept that institutions might be forced to close, although it recognized that subject courses would.

The college is to continue recruiting for postgraduate courses for 1982 and 1983 and is accepting students for the two-year international baccalaureate this September. Inservice courses are to operate normally until 1984 and a new home may be found for them.

Sister Nourse is planning to retire in 1985.

## Joseph in pay crisis talks

by David Jobbins

Voluntary chancellors are to meet Education Secretary Sir Keith Joseph over the university teachers' pay claim next week.

A discussion was sought by the chairman of the vice-chancellors' committee, Dr Albert Sloman as university medical teachers decided to plan disruptive action if they are denied a 6 per cent award to match the Health Service staff.

The problem of bridging the gap between the 10 per cent award of the Government limit is most acute for the 3000 clinical staff. The chairman of their negotiating body, Professor Robert Wheelan, has already told Dr Sloman that the limit made it impossible for his broad comparability between medical lecturers and NHS staff.

"It is comparability is not maintained the consequences, apart from the obvious, is that the Clinical Academic Staff Salaries Committee becomes redundant; will in the opinion of CASSOC be to the detriment of both the university medical schools and the NHS," wrote Professor Wheelan, vice-chancellor of Liverpool University.

Dr Sloman was being suggested that this should be made extra money available to make up the shortfall with the Department of Education. But no group of university workers has taken up Sir Keith's assurance that money saved by settlements within 4 per cent would remain in the system.

Mr John Akker, deputy general secretary of the Association-Clinical staff are united in that the Government must make more money available so that both groups can receive increases in line with groups they are traditionally aligned with.

This week's Conference of Medical Academic Representatives (GOMAR) the British Medical Association voted to drawing a list of potential sanctions, which according to one representative could range from undermining university administration refusing to act as external examiners and to carry out NHS duties.

BMA negotiators are to meet the CVCP within 21 days to argue that this was an issue of principle, for a parity which had been established for over 10 years. The conference also voted to put all university job advertisements in the "special notice" section of the British Medical Journal, a system intended to dissuade applicants.

## Birmingham U-turn on losses

by Ngalo Crequer

Birmingham University has produced a compulsory redundancy procedure which seeks to bypass tenure and retreat from earlier assurances given to staff about reasons for dismissal.

The procedure says that in the opinion of counsel the university has authority to dismiss staff because individual appointments can be terminated by senate ballot.

According to the document there is "serious doubt" about reaching target savings by natural wastage and early retirement "so it is prudent to contemplate the possibility that a redundancy programme will have to be implemented in order to lose staff by October 1983." It had to be assured that decisions will be challenged in a court of law.

Staff selected should be given two weeks to respond and could appear with a "friend" before a faculty board to appeal.

Last year senate assured staff that members would not lose their rights to claim compensation for wrongful dismissal or breach of contract. Senate also stated that financial reasons should not be used as a reason for dismissal.

The AUT claimed this week that the university was overruling both these decisions and that the docu-

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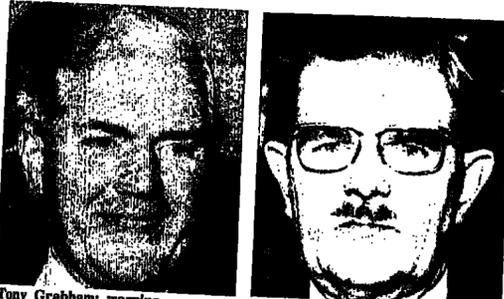
Details page 2

Overseas policy criticized

The Government's refusal to make any more money available to finance changes in its policy on overseas students...

Doctors told to be defiant

If medical schools do not defy the Government by reducing their student intake, the General Medical Council may have to deregister some of them...



Tony Grabham: warning John Walton: investigation

Call comes for more committees

Committees are the answer to cuts, according to participants at a conference on the effect of the UGC cuts on medical education...

Co-ed Pembroke

Pembroke, one of Cambridge's oldest colleges, founded in 1347, is likely to admit women students for the first time in 1984...

The investigation was in two established medical schools selected at random, Sir John said...

The alternative was for medical schools to refuse to take the number of students laid down by the Government...

Boost for YOP

Colleges are planning to expand their participation in the Youth Opportunities Programme in anticipation of the new Youth Training Scheme...

It has been instigated after complaints from the Royal College of Physicians that candidates for their higher examinations were below standard...

Too few medical teachers

Pre-clinical medical students will soon have no teaching from medically qualified university teachers because of low pay and university cuts...

New bid for arts at Bedford

Queen Mary College, London is the second college to bid for Bedford College's faculty of arts.

The GMC has the power to deregister departments which do not meet its standards. It means taking away their students' right to be qualified doctors...

The conference also agreed to ask the UGC to set aside funds for medical schools, and re-emphasized its policy that medical school intake should be frozen at the 1979 level...

The bid comes before next week's special meeting of the Bedford governors, called to discuss for a second time, the proposal to merge the whole of Bedford with Royal Holloway College...

Lecturers call Murray into hours dispute

The college lecturers' union has drawn TUC general secretary Mr Len Murray into its dispute with council over increased teaching hours...

The GMC has the power to deregister departments which do not meet its standards. It means taking away their students' right to be qualified doctors...

Professors query Swinnerton-Dyer

Engineering professors are preparing a fresh set of initiatives to reinforce their case that engineering research should receive awards comparable with salaries in industry...

Aliens from art school

Strange students they turn out of college these days! These weird-looking aliens, are the work of John Elson, Pip Carpenter and Graham Thomas...

Call for cash

A call for more money to be spent on vocational education and training has come from the principal of Robert Gordon's Institute of Technology, Dr Peter Clarke...

Deputy promoted

The Reverend Francis Xavier Walsh, the acting principal of Birkbeck College, London, has been appointed principal of the college for three years...

Kellogg gives Oxford £1.75m

An American foundation has donated almost £1.75m for major improvements at Oxford University's department of external studies.

Why councils want to merge

The Technician and Business Education Councils have made public their reasons for wanting to merge into a single national and powerful body.

Hungry student

A Colley Harlech student is on hunger strike in protest at the appointment of a non-Welsh speaking registrar at the college. The National Union of Students (Wales) is backing the student, Mr Gareth Lloyd-Daugh.

Prodigy vote

A proposal that children under 16 should only be allowed to enter Oxford University will split the Oxford Union, which was defeated 634 votes to 540 in a postal ballot of dons...

Control needed for teacher training

Content of teacher training courses could come under stricter control if a confidential blueprint from Her Majesty's Inspectorate is put into effect.

No hall subsidy call by Bevan

Local authority colleges of further and higher education which have halls of residence have been told to plan for the removal of subsidies on accommodation and catering.

Private catering opposed

Students and trade unions at Manchester University are putting up their own alternatives to university proposals for catering at the Owens Park student village.

Different subjects for different sexes

There is still a marked difference between which courses in further and higher education attract men and which attract women...

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University museum may close to public

Dr Williams said that by the fee and by selling duplicate prints and certain acquisitions, the museum and art gallery hoped to raise money for an endowment fund through which it could buy works the university could no longer afford.

AUT attacks Merrison's report

The Merrison Report on university research may as well be "torn up and thrown away" if the Government refuses to provide extra resources to bolster university work...

There have already been protests over the court's decision to sell a collection of prints and negatives by the Scottish pioneer photographer, David Octavius Hill.

The report's other main recommendation, that each university should set up its own research committee to plan the balance and specialization of its work, was being seen this week as a longer term objective by the Committee of Vice-Chancellors and Principals.

The University Grants Committee has turned down a request for an increased grant to meet these "extraordinary expenses", said Dr Williams, and the university is now applying for grants to both Glasgow district council and Strathclyde region.

Mr Geoffrey Caston, CVCP secretary general, said it would be up to each university to respond and "this would take some time". He said the news in the Merrison Report may be "pretty dreary" but it confirmed what people had been saying for some time.

The university court has decided an entrance fee should be charged for the gallery's Mackintosh House which contains furniture and reconstructions of interiors designed by Charles Rennie Mackintosh.

Professor John Ashworth, the vice-chancellor, said the committee would take a hard-headed look at Salford research, and aim to support scholarly endeavour, research development work, as well projects in the research council mould.

In addition, a formal body of representatives of the DES and DHSS would ensure communication between them. The conference had warnings about the perilous state of minor specialties, pathology, and medical schools and research.

Details page 8

Aliens from art school

Strange students they turn out of college these days! These weird-looking aliens, are the work of John Elson, Pip Carpenter and Graham Thomas...

NUU merger in doubt

The New University of Ulster may be postponing its decision to merge with Ulster Polytechnic now being investigated by an official steering group.

The bid comes before next week's special meeting of the Bedford governors, called to discuss for a second time, the proposal to merge the whole of Bedford with Royal Holloway College, on the Egham, Surrey site.

NUU has still not made up its mind if it will appoint representatives to the steering group even though the group has its first official meeting next week. The polytechnic has also held back because of NUU's position.

In this game of musical chairs, both Westfield and QMC have asked Bedford's arts faculty, which is generally opposed to the RHC merger, to join them. Also, University College is keen to have the Dutch and Italian departments and King's College would like mathematics.

The matter is likely to be discussed by the university's governing council on Tuesday, but opinion among academics is still so strongly against the merger that even to select representatives is being seen as tacit approval.

The latest proposal from QMC came in a letter from the principal which was read out at the Bedford council meeting. They have been asked for more information.

Last week NUU issued a document heavily criticizing the Chilvers review of higher education in the province as a "poor report" that was "highly unbalanced and misleading".

As the THES meeting to press the arts faculty was meeting to discuss two motions, one authorizing the dean to follow up urgently the approaches received from central London colleges.

Dr William Cockcroft, the vice-chancellor, said this week NUU wanted to preserve its right to approach Northern Ireland ministers or even the Secretary of State for Education to put their case "if this seemed appropriate".

The first governors' meeting approved a change in the charter, necessary to facilitate the RHC merger, but as the vote failed to win a majority of three quarters, it had no constitutional effect.

The Government accepts no decision can be made in time to affect student intake for 1983, but it will not be happy to let matters drag on beyond that.

At Chelsea College, London, legal submissions have been made by both the college and the Association of University Teachers to Lord Hallahan, the Visitor, on the question of whether he has jurisdiction to intervene in an internal dispute.

One compromise being discussed would be for both institutions to send observers at the highest level to attend the early meetings of the group. There is also speculation the Government might issue a statement to clear the air that whatever the final outcome there would be no redundancies.

The colleges have resolved to close the departments of humanities, social and psychological studies and a social work course. The AUT claims this so reduces the humanities and arts content of the colleges that it breaches the charter, which includes reference to advancing learning and teaching in the humanities.

One compromise being discussed would be for both institutions to send observers at the highest level to attend the early meetings of the group. There is also speculation the Government might issue a statement to clear the air that whatever the final outcome there would be no redundancies.

The question of jurisdiction must be solved before the merits of the case can be heard. The college argues the Visitor should decline to adjudicate on decisions fully discussed and debated within senate. The AUT says his powers are unlimited and it is his duty to intervene if statutes are being breached.

Local authority colleges of further and higher education which have halls of residence have been told to plan for the removal of subsidies on accommodation and catering.

More women still choose to study arts and humanities while more men opt for science and technology. The report however shows an improvement in the number of women who actually get places on university courses. Since the mid 1960s, women have risen from 28 per cent to 39 per cent as a percentage of the total number of full-time undergraduates.

Local authority colleges of further and higher education which have halls of residence have been told to plan for the removal of subsidies on accommodation and catering.

There is still a marked difference between which courses in further and higher education attract men and which attract women, the Equal Opportunities Commission's annual report says.

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Vertical text on the left margin: Special Life



# Dons fight to keep foreign graduates

from Peter David

WASHINGTON University leaders have mounted a campaign to prevent Congress from passing a Bill which would force graduating foreign students to return home for two years before applying for permanent work or citizenship in the United States.

The measure is an amendment to the Immigration and Nationality Laws and was due for debate in the Senate last week. It has already cleared the major committees in the House of Representatives.

Sponsors of the Bill intend to reduce the number of overseas students who remain in the United States after graduation. They argue that the US is becoming too dependent on foreign skilled labour and that developing countries are suffering from a brain drain to the US.

But the American Council on Education believes the Bill could cause shortages of skilled personnel in industry and higher education.

In a letter to congressmen the ACE describes the Bill as a shortsighted measure which will damage the American economy without helping the developing countries.

If enacted as proposed many highly trained foreign students would be likely to seek employment in technologically advanced countries rather than returning home, and their skills would be lost both to the United States and their home country," the letter says.

Academics are particularly worried about the impact of the Bill because foreign students have been taken science and engineering posts in universities which cannot easily be filled by American citizens.

A recent report by the National Science Foundation estimated that in 1979 four out of every ten engineering students graduating in the US were from abroad. Five out of ten engineering doctorates were awarded to foreign

nationals. Even the present levels of foreign recruitment to university posts have not prevented a serious shortage of engineering lecturers, however. The most recent estimate puts the number of vacant engineering posts at more than 1,600.

Dr Robert White, head of the electrical engineering department at Stanford University, said in a letter that the Senate judiciary committee the new Bill would compound the shortage.

There is a genuine and pressing shortage of engineering talent in many areas, especially electrical engineering and computer sciences. Expelling foreign students trained in these areas can only weaken our national position in these commercially and militarily strategic positions," he said.

University lobbyists admit privately they have little hope of blocking the Bill now that it has won bipartisan support in both the House and Senate. But they hope that Senator Edward Kennedy will successfully propose an amendment waiving the requirement to go home for a limited number of overseas graduates.

Senator Alan Simpson, the Bill's sponsor, understood to have agreed informally to accept an amendment enabling some 2,000 foreign students "of exceptional ability" to remain and work in the US immediately after graduation.

The ACE believes that the figure of 2,000 is too low, but the Bill's supporters said they were determined to wean American companies and universities from their dependence on foreign recruits.

Mr Arnold Liebowitz, a member of the staff of the Senate immigration committee, said last week that despite some temporary disruption the new measure would result in a higher proportion of American citizens being trained in high technologies.

# A most controversial academic

Peter David begins a series on university teachers in American government

Washington pundits are beginning to ask why they did not predict that Jeane Kirkpatrick, the professor of political science plucked out of Georgetown University to represent America at the United Nations, would become the most controversial academic to serve the Reagan administration.

A whirlwind political romance swept the Democratic professor into the Reagan camp and later into the UN. But the honeymoon was brief and in recent months disagreements between the administration and its ambassador have become more serious and less discreet.

Mrs Kirkpatrick owed her sudden elevation to the international stage to a sequence of events of the kind most academics can only dream about. In 1979, as a professor at Georgetown University and resident scholar at the American Enterprise Institute, she could claim distinction, but not fame, as a political scientist and an authority on Latin America.

Last November, however, an article she wrote for the conservative journal *Commentary* attracted the attention of Mr Reagan's campaign manager. The presidential candidate met the professor and persuaded her to discard her links with the Democrats.

The article which so impressed Mrs Kirkpatrick's Republican mentors was an attack on President Carter's foreign policy, particularly the importance it attached to human rights. As a scholar of Peronist Argentina she believed it was utopian nonsense to apply the political standards of the affluent democracies to countries with different histories and cultures.

The pragmatism of the article appealed to the practical politicians in the administration, and the ideologists of the new Right were impressed by the distinction Mrs Kirkpatrick drew between communist



Kirkpatrick: distinction, but not fame, as a political scientist

tyrannies and "less repressive" traditional authoritarian governments. To Georgetown seemed an ideal spokesman for a newly assertive American foreign policy.

But 18 months under the UN spotlight has begun to expose flaws in the relationship between Mrs Kirkpatrick and the administration. The erudition, anti-Sovietism, a combative style and a knowledge of Latin America - have caused embarrassing conflicts with the State Department.

Mrs Kirkpatrick's unyielding anti-Sovietism brought her to the brink of resignation over what she viewed as a moderate American response to martial law in Poland. Her advocacy of the Argentine cause in the Falkland Islands brought her into conflict with Secretary of State Alexander Haig.

But an academic attitude and inexperience in politics have probably done most damage to her position. In an erudite but unguarded speech to the Heritage Foundation a fortnight ago she described American foreign policy as "amateurish". The

speech, plucked out of context, infuriated President Reagan and his aide Mr Haig.

Mrs Kirkpatrick, meanwhile, said to be frustrated by her experiences at the UN. Although she lectured overseas her career has been built on teaching and research, not professional diplomacy.

As UN representative Mrs Kirkpatrick exerts considerable influence and is the only ambassador to the presidential cabinet. But she has a difficult and often hostile relationship.

When Mr Haig told reporters that Mrs Kirkpatrick was a "strong commander", Mrs Kirkpatrick saw that she had little understanding of the military metaphors. Unlike the Secretary General, she said, she was unaccustomed to an academic environment where ideas and a democratic style prevailed over hierarchy.

For an academic turned diplomat it was an impolitic remark, which may be remembered as an unwittingly accurate political

# Overseas news

## How working your way through college can make you ill

by Malcolm Bowen

More than half the students at Munich's institutions of higher education do some form of work to help support themselves. But students who work are almost twice as likely to become ill as those who do not.

These are two of the findings contained in a survey published by Munich's student welfare organization. The 180 page report was compiled from a questionnaire completed by 15,000 students. One in five men students shares a flat with his girlfriend, and one student in four switches subjects at some stage.

Some of the information in the report has a familiar ring. There is the complaint that children of working-class parents are under-represented. Although 41 per cent of the working population in Germany is categorized as "working class" only

12.4 per cent of students come from this class. And among the students of working-class origin only one in every three is female.

Two out of three "working-class" students receive grants, compared with one out of three generally. Among grant-aided students only 13 per cent receive the maximum amount.

Parents make a financial contribution in 61 per cent of cases, and the average amount involved is £100 monthly. Of the students who work to help finance their studies 37 per cent report that their outside jobs cut into lecture time. On average the Munich student needs £196 per month. Of this amount (again on average) £56 goes on rent.

In the field of student accommodation there have been considerable changes over recent years. In 1963, 44 per cent of students lived in lodgings.

Now, the figure has gone down to 13 per cent - students have moved out of digs and taken to privately rented flats (occupied by 7 per cent of students 20 years ago but by 49 per cent now).

The proportion of students in student hostels has remained unchanged at 12 per cent. If one adds up the figures for digs, flats and hostels one is still left with a large gap. This is filled by the 24 per cent of students who live with their parents. This is a familiar situation at German universities since students are very conscious of the cost of their studies and so will often stay at home and attend the local university.

Another way in which German universities differ from British is that students tend to be older, according to the survey. Courses are longer since a student will have to reckon with a period of six years or more

for a degree in a subject such as medicine or chemistry the course will be even longer. Men too, will often have put in a spell of compulsory military service before starting their studies. A high proportion - 12 per cent, in Munich - are married.

A quarter of the students in Munich are studying something other than the subjects for which they enrolled. In 1974 the figure was only 14 per cent. But there are wide differences between the various higher education institutions in the country. The traditional Ludwig-Maximilians University one third of students have changed courses whereas the figure at the technical university is less than half this, at 14 per cent. At the polytechnic 17 per cent have changed - but here there has been a dramatic leap since 1974, when only 3 per cent of the students switched subjects.



# Africans urged to study locally

by John O'Leary

Vice chancellors from a dozen East and Southern African universities have agreed to improve regional co-operation and strengthen their universities in an attempt to encourage students to study locally rather than going abroad.

A three-day conference held this month at Dar Es Salaam University, Tanzania, considered the report of a five-year research programme, which found that local institutions were usually as capable as those abroad of providing adequate higher level training. The meeting was considered sufficiently important to be addressed by President Julius Nyerere.

The report was commissioned at a meeting of East African universities five years ago in Lesotho. This month's meeting, which was attended by academics from Tanzania, Kenya, Uganda, Mauritius, Somalia, Sudan, Botswana, Swaziland, Lesotho, Malawi, Zambia and Zimbabwe, agreed formally to extend the group to include Southern African nations.

Research found little evidence of "sharp differences" in the performance of those educated abroad and those who attended universities in the region. The evidence of the re-

port was said to show that the institutions were "broadly similar."

The report recommended that higher education within East Africa should be strengthened and made more relevant to the manpower requirements of the countries of the region. The group is now undertaking an inventory of local institutions of facilitate regional co-operation.

Tanzania has been considering the establishment of three new universities before the end of the century, one in the new capital of Dodoma, one in Zanzibar and a third in a location to be announced, possibly an offshoot of the existing Dar Es Salaam University. But an education reform, one of a number of reviews ordered last year by President Nyerere, has come out against the plan.

Instead the review proposes only the upgrading of the agriculture, veterinary science and forestry faculties at Dar Es Salaam. Like the earlier plan, the main aim of this development would be to expand provision in the sciences subjects in response to manpower projections. The emphasis would continue to be on educating adults and on bringing education to those from rural areas.

# Loyalty of women graduates

from Geoff Maslen

MELBOURNE Women graduates are almost as likely as men to be loyal to their first employers, researchers at Sydney University have found.

A study by Philip Coyte of the university's Careers and Appointments Service has found that of nearly 1,300 graduates in 1974, some 48 per cent of women were working for their first employer five years after graduation, compared with 44.4 per cent of men.

Decisions by many employers to employ graduates often hinge on an expectation of how long recruited graduates are likely to stay. "That does not fit in with the traditional attitude of academic faculty," she said.

Most of the courses supported to be in high-technology fields which colleges and universities found difficult to keep pace with new developments. Ms Ulrich said. The management consultants Arthur D. Little awarded its own masters and doctorate degrees and Wang Industries computer manufacturer, offer to employ a degree in software engineering.

Lower down the spectrum, many companies have decided to employ their employees in university-like settings. The Macdonald Corporation owns a campus called Hampshire University in Illinois for example.

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# 1000 a year increase in students

from Lindsay Wright

WELLINGTON

A summary of university statistics released by the New Zealand Vice-Chancellors' Committee shows that the number of university students in this country has risen by an average of 1,000 a year over the past decade, taking the total enrolments from 34,089 in 1971 to 44,736 last year.

Auckland, with 12,239 internal students in 1981, was well ahead of Canterbury (7,496) and Victoria (7,035). Waikato 6,825, Massey 5,939, Otago 6,534 and Lincoln 1,671. A further 7,699 students enrolled for extra-mural courses at Massey last year (up 10.6 per cent from 1980), putting the combined total of internal and extra-mural students at 53,535.

Nationally, 35 per cent of all students are enrolled in arts courses, 17 per cent in science, 15 per cent in commerce, and 6 per cent in law, agriculture and horticulture.

Women consistently outnumbered men in the faculties of arts, fine arts, education, music, and physical education, while Otago's school of home science had only one male student among its 297 enrolments last year.

At the other end of the scale were the Auckland and Canterbury Engineering Schools where 3 and 4 per cent respectively of student enrolments were women. Also trailing in sex equality were commerce (26 to 32 per cent), dentistry (22 per cent), and the agricultural disciplines (23 to 24).

Nationally, enrolments of women increased last year by 684, and they made up 42.6 per cent of all internal enrolments.

Overseas student numbers dropped by 27 in 1981 to 2,046. Since 1978 there has been a 24 per cent fall in overseas student numbers, with Victoria recording a 51 per cent drop - almost twice the national average. The falls of 27 per cent at Otago, 26 at Canterbury and 24 at Auckland are close to the national average.

The overseas numbers at Lincoln are down 11 per cent, and at Waikato they are down 8 per cent. Massey, defying the trends, has had a 12 per cent increase.

PHD enrolments have risen steadily over the past decade from 613 to 1,075 last year. A large increase in agriculture and horticulture science took the numbers in those disciplines up to 115, with Lincoln's 86 candidates making up 5.1 per cent of total student enrolments there.

Taking the universities faculty by faculty, the top 10 for PhD candidates included all six science faculties, Massey's Veterinary Science Faculty, Canterbury's Forestry Faculty, Lincoln College, and Auckland's Engineering Faculty. Victoria's 8.8 per cent figure led the list, with 8 per cent of its students enrolled for PhDs at Auckland Science Faculty. Figure was 4.9 per cent.

# Lecturer appeals against 11-year political sentence

Dr Marko Veselica, a former lecturer in economics at the University of Zagreb, last week came before the Croatian High Court, to appeal against an 11-year sentence for political activities imposed last year.

Although the result of the appeal is not expected for several weeks, his wife, Bozena, has appealed to academics throughout the world to defend her husband, and their colleagues, whose health, she says, is seriously threatened by his conditions of imprisonment.

Mrs Veselica, a schoolteacher, and her two daughters - one at school and the other a student of English at Zagreb University, told a visitor shortly before the hearing that following a hunger-strike while he was in pre-trial detention last year Dr Veselica has developed serious intestinal trouble. He is unable to digest the prison food; however, all requests that, for medical reasons, he should be allowed to have meals sent in from outside, have been refused.

Other victims included the retired army officer and historian Dr Franko Tufjman and the poet Ivan Gotovac.

He is allowed only one small food parcel a month, and is confined in a tiny cell which prevents him from taking more than a couple of paces in any direction. Exercise, in a cramped yard, is restricted to a few minutes three times a week. Moreover, the Zagreb jail where he is at present confined is intended only for prisoners whose cases have not yet been heard or who are awaiting an appeal hearing; if his sentence is upheld by the High Court.

Dr Veselica has already served one term in Starogradska - from 1972 to 1979, when he was released before the expiry of his term. His freedom was short-lived - a letter brought down official wrath upon any academics suspected of a critical attitude that could be construed as "anti-socialist".

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# Training for doctors could change

Harvard's medical school is considering a reform of its curriculum in order to stress character and emotional maturity in the training of doctors.

Dr Daniel Tosteson, the school's dean, has told colleagues that a pilot group of 25 students could be put through a reformed programme next year given the agreement of the faculty.

Under the new programme, medical students would no longer have to complete four years of pre-medical undergraduate education before their four-year clinical and science courses at medical schools.

Instead, students would be allowed to enter medical school after their second undergraduate year and embark on an integrated seven-year course of medical and general courses. At that point students would receive their medical qualification and be permitted to proceed to a shortened period of residency in a hospital.

The new curriculum could have far-reaching consequences for the training of doctors in the US. Harvard has long pioneered curriculum developments which are later adopted by other colleges.

Dr John Cooper, president of the Association of Medical Colleges, hailed the Harvard initiative. "This is a good new emphasis on re-examining the curriculum," he said.

In press interviews last week Dr Tosteson said a primary objective of the change would be to teach students to use mature insight for problem-solving rather than continue to stress the accumulation of technical knowledge.

Computerized instruction would keep students up to date with scientific knowledge while teaching would emphasize analytical skills and the understanding of patients.

# Director retires early

Dr John Slaughter, director of the National Science Foundation, has resigned after serving only two years of a six-year term. He said last week he would take a post as chancellor of campus near Washington.

Although Dr Slaughter claimed his personal retirement was based on financial difficulties, the move has been interpreted by the science community in the United States as a reflection of low morale within the Science Foundation, which is the equivalent of Britain's research councils.

Mr William Carey, executive director of the American Association for the Advancement of Science, said he believed Dr Slaughter had found the \$50,000 salary at the NSF inadequate. As chancellor of College Park he could earn \$75,000 a year.

But Mr Carey said the problems faced by the NSF as a result of the Reagan administration's budgetary austerity had probably contributed to Dr Slaughter's decision to leave.

"He came into the office at a time when the expectations were that Government support for the budget for basic research and education would grow - that it would remain the growth that had started in the last year of the Ford administration," Mr Carey said.

"What has happened instead is that under present budgetary difficul-



Dr Slaughter's new job.

ties the foundation has been held quite lightly to the budget and many of the activities, including those in support of social science research, have been cut far back."

Dr Slaughter was nominated to head the NSF by the Carter administration after two years as assistant director of the foundation's astronomical, atmospheric, earth and ocean sciences.

# Privilege appeal fails

A university professor's three-year legal battle to uphold the confidentiality of academic promotions, which failed at the Supreme Court last week.

The court dismissed an appeal by Professor James Dinnin, who was called for three months for refusing to divulge his vote on a tenure decision later contested by the unsuccessful applicant.

on committees was an infringement of freedom and a violation of a common-law privilege designed to protect the secret ballot.

Last week, however, the Supreme Court upheld an Appeals Court opinion that academic freedom could not be interpreted as "carte blanche" protection of all decisions. The Appeals Court justices said the common-law privilege was to protect judicial decisions, not employment decisions.

# Company colleges attract more students

from our North American Editor

While mainstream colleges and universities languish in the financial doldrums this year, business appears to be booming in the private colleges and training programmes operated by the Bell and Howell Corporation, one of the nation's biggest manufacturers of electronic teaching equipment, announced last week that enrolment in its seven wholly-owned technical institutes had increased by nearly a quarter in a single year and was now almost 20,000.

"Many people are turning to institutes such as ours for training in Kingesley Bewley, president of the company's education group. "We are even getting increased numbers of Bachelor's degrees in other disciplines; and even some with advanced degrees."

Bell and Howell is one of the most important operators of "proprietary colleges" - post-secondary institutions which are wholly-owned by corporations but which run full-time academic courses accredited by mainstream educational associations.

The company's institutes offer full-time courses in electronics and computer sciences, leading to a diploma or a Bachelor's degree which is fully accredited by the National Association of Colleges and Schools. Students are eligible for the same Federal grants and loans offered by traditional private and public universities.

While Bell and Howell runs institutes for profit, many more corporations have set up higher education programmes to train their own employees or to attract highly-skilled recruits. The Carnegie Foundation for the Advancement of Learning estimated recently that companies spend more than \$200,000 a year on education and training. More than 2,000 of these courses

at 138 different corporations and college credit, according to the American Council on Education, in Washington-based umbrella institutions for higher education. There is no record of the number of students who have graduated or used that credit to transfer to the traditional higher education system.

Ms Nell Ulrich, who is conducting research into the explosion of corporate higher education for The Carnegie Foundation, said industry has invested in the courses for a large number of different reasons. Some companies concentrated on offering teaching while others offered an prospect of degree-level study as an inducement to talented employees.

"At the higher levels companies want to be able to organize training the way they want to. They can run courses over weekends and during courses in three days. That does not fit in with the traditional attitude of academic faculty," she said.

Most of the courses supported to be in high-technology fields which colleges and universities found difficult to keep pace with new developments. Ms Ulrich said. The management consultants Arthur D. Little awarded its own masters and doctorate degrees and Wang Industries computer manufacturer, offer to employ a degree in software engineering.

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# Violence hits second black campus

from Craig Charney

JOHANNESBURG Angry students from the University of the North went on a Saturday night rampage, causing almost £200,000 of damage. A crowd of more than 300 students from the black university burnt down a university book store following a march against the police. No arrests were made, and classes resumed normally on the following Monday.

The violence erupted on the rural campus north of Johannesburg, following ceremonies to mark "A B Tiro day", honoring a student leader assassinated in exile. After a rally, attended by most of the institution's 300 students, a small group broke away to march off campus.

The exact reason for the outbreak was unclear, but a report prepared last year warned that the university was hotbed of racial tension because of continuing white domination of its academic life. The trouble at Turfloop marked the second outbreak of unrest at a black campus in South Africa within a month, following a riot at Fort Hare university in May.

Paul Flather looks at a report to the Government on the state of university research

The Merrison remedy; protect and survive

There is a serious flaw in the report on university research published last week by a joint working party from the University Grants Committee and the Advisory Board for the Research Councils.

While it gives the arguments for supporting research, warns of impending damage and ends with a plea for a "relatively modest amount of new money", it does not solve the immediate problems.

The solutions proposed to shore up the system do not go far enough. If the Government relents, listens to the plea and, against the present trend of spending cuts, sets aside more money, the report will have succeeded in one of its major objectives. If it does not, the test for the report will be whether it has come up with the right recommendations for universities, in cooperation with the UGC and the board, to put their own research efforts into a healthier state than at present.

No date for a Government response has been given. The only official reaction is contained in a brief preface from Sir Keith Joseph, the Secretary of State for Education, who says he will consider all recommendations addressed to the Government. But he appears to endorse an underlying theme of the report - that research should have more direction and be specialized.

The report was born out of concern for the health of university research expressed by both the UGC and the advisory board. In March 1980 a joint working party chaired by Sir Alec Merrison, vice-chancellor of Bristol and board chairman, and including UGC chairman Dr Edward Parkes, was given the task of reviewing "the current arrangements for the support of university research in the natural and social sciences; to consider how far these arrangements make for the most effective use of existing and likely future resources; and to report to the ABC and the UGC."

There was particular concern about the dual support system through which university research is funded by the UGC, and external funds mainly from the research councils. At a press conference last week Sir Alec made clear the working party's endorsement of the present system. "It is a good way of doing business. It may not be in the healthiest state at present. But it is the best way of working."

The majority of the report, which runs to 31 pages, describes and analyses the dual support system, the needs of university research, the various funding agencies and their policies, and the effects of economies on research. When the Merrison team began work the agenda was mainly to look at the strains which had appeared during the 1970s because of declining budgets.

The cuts in university grants announced in March 1980 changed the picture, and the working party had little option but to share its original drafts, and for several months during which Sir Alec and Dr Parkes agonized over the future shape of the report, little was done. Eventually the report was re-written to take account of the new round of cuts.

The final report, remaining cautious, attempts two "solutions" to the predicted difficulties facing university research. First there is the plea for more money, coupled with a recommendation for universities themselves to spend proportionately more of their declining budgets on research. Secondly, is a strategy based on greater selectivity and specialization.

Sir Alec manifested last week that money remained the crux of the problem. "We don't have any illusions that it is money that is really needed. I am not so pessimistic that every plea for money from the Government falls on deaf ears." Given that you do not have enough money and that you want to support high quality research, there has to be specialization, he added.

There are two proposals to aid specialization: that all universities should set up research committees to plan the balance of future research work; and that new staff should be recruited to ensure the vitality of subjects. But it is here that the report appears at its weakest. The research committees with representatives from all sections of the university will be charged with deciding

which research areas to boost and which, by implication, to run down. Such internal peer review is chock full of problems. Sir Alec acknowledged there would be loud complaints. "But then there always are in universities."

The committees will be charged with allocating proportionately more of the university budget to research. This seems wishful thinking at a time when even essential facilities like libraries are being pruned. But also this is precisely where the dual funding system is creaking most: it is no longer possible as the Merrison team acknowledge to guarantee that UGC funds meant for research will in fact end up supporting research, and not teaching. A debate covered in the report was between "earmarking" UGC funds for research and maintaining the block grant. Dr Parkes said last week it was not always easy to know what is research and what is not. Earmarking too large a propor-

tion of funds can lead to inflexibility, while earmarking itself can provoke compensatory reductions in support that would have come from a block grant. "We have to steer an uneasy path between zero-dirigisme and total dirigisme," was how Dr Parkes put it.

But there was no discussion of separating out the support for teaching and scholarly work, from support for research, on grounds that not all teachers are good researchers and vice versa, an idea gaining currency at present.

On recruiting new staff, the working party has identified the problem but its solution that in practice "the headroom" for new recruitment would have to come from larger reductions in staffing would run straight into the sternest union opposition. The working party points to the need for long-term radical reforms including a review of the "difficult point of tenure". But, as

Sir Alec acknowledged, the problem may be one of the most important universities have to solve, but it is "not easily solvable."

It is this lack of vision that has led to the report being termed "well-meaning" and "wishy-washy", and led to some speculation that the report was "so empty" that it should not be published.

Given the composition of the working party, and its official nature, a fairly conservative document was expected. But what has really disappointed academics is that having identified the strains in the dual funding system, having sounded the warning bell for future research, the committee fell back on the dual support model knowing full well it was already failing to protect research.

Professor Geoffrey Oldham, professor of social policy at Sussex University, said the objectives in the report were good, even radical. "But

the means to get there are not clear. We are not given any lead. Professor Oldham has co-written a paper for the Leverhulme Trust which calls for a break in conventional thinking, with the funding of teaching and scholarly work separated from the funding of research.

Professor Tessa Blackstone, professor of educational administration at the Institute of Education, London University, said the dual funding system could not guarantee funds would end up supporting research as stipulated. She favoured a more fundamental reform with research funds being controlled through the research councils.

Professor John Ashworth, the chancellor of Salford University, a former chief scientist in the Cabinet Office, said the report appeared to lack bravery "at a time when bravery was needed". He wondered what was in the report that would actually encourage universities to go out and secure new contracts for research, or what incentive there was for "developing" research as opposed to supporting new research. "I have a chance to think much more broadly about research generally had been missed," he said, "I find that sad."



Working party members: Allen, Bromley, Richards, Parkes, Holdgate, Gunn and chairman Merrison

'We let it waste at the nation's peril'

The report opens with a clear warning about the future of research in universities. In the preface Sir Alec Merrison, chairman of the official working party, says: "There are grounds for concern that, both as a result of past trends in university expenditure and even more so in future because of recent public expenditure decisions, the capacity of universities to undertake basic research is being seriously impaired."

The warning continues in the introduction: "It hardly needs restating that in facing the challenges of the years ahead the nation will rest heavily on the highly qualified scientific and technical manpower produced by the universities, and on the vigour and vitality with which universities pursue their research and stimulate innovation. It is estimated that two-thirds of the nation's future research is housed in universities."

The report identifies the increasing strains on the system for supporting research which built up during the 1970s. To these was added the pressure of first level funding and then reduced funding. Together with the effect of the Government's policy on the full-cost fees for overseas students, the fall in resources over the next few years is expected to be 11 to 15 per cent.

"We cannot emphasize too strongly our concern for the health of university research, and through that the health of the nation's research capability. We let it waste at the nation's peril," the working party says. Universities will have to find large savings rapidly, with a potentially disastrous effect.

The working party goes on in its final paragraph to urge the Government to provide extra funds to minimize this damage to university research. "Our final recommendation," it says, "therefore is that the Government should, in the national interest, weigh the damage to research that is now precipitously close against the provision of a relatively modest amount of new money which could be used to mitigate this, and aid the transition to lower levels of more orderly fashion."

Another major recommendation

from the working party is for universities to begin channeling proportionately more of their funds into research "notwithstanding adverse effects elsewhere."

The working party took as its task "not to design a radically new structure but to propose ways of adjusting the present one to accommodate current economies required of universities." Perhaps its most significant conclusion is whole-hearted endorsement of the so-called dual support system, by which university research is funded through the University Grants Committee, and through external sources, mainly from the five research councils, but also from industry and trusts.

"We have come to the conclusion that it is, in principle, an impressive system for the support of university research and it should be retained," it says. The system caters for the nurturing of new talent, for the emergence of innovative work and growth points, and for the additional support of promising lines of work.

The essence of the system is founded in the character of fundamental research itself, according to the report. Such research by its very nature is often ill-defined and its results unpredictable. Three examples are given: against convention or of apparently useless nature but which, quoted, Chadwick's discovery of the neutron; the discovery of penicillin; and the synthesis of techniques leading to molecular biology.

"It is vital that support is available for such work even though it may be impossible to describe it in a convincing form. Properly required, the system provides a source of support through the deployment of general university funds. As the work is recognized, and more money is needed for its development, the dual support system also provides the means for additional funds to be deployed in the form of external grants and contracts."

The report examines in some detail the effects of economies on research. Economies required during the 1970s had had a disproportionate

ate effect on research, with "well found" laboratories now rare, with increased competition for scarce grants from the research councils, and with universities unable to recruit new blood at the rate required to sustain basic disciplines.

The working party examined a range of data to assess how badly research had been hit. However it ran into a number of snags, primarily that expenditure on the research elements of staff was simply not differentiated from expenditure in general.

The data convinced the working party that even before the 1981 government cuts, university funds were no longer sufficient to support the reasonable research needs of staff in many disciplines and departments.

The working party had no doubt that whatever research was done should be of high quality and properly supported, which means universal. It will have to concentrate research funds into selected areas, not in research councils but in terms of creating a strong infrastructure in chosen areas.

In order to aid the task of choosing research areas and devising ways of support, the working party recommends universities to create "new mechanisms" in particular the establishment of research committees. They would have a role in raising awareness generally, should "regularly" selected areas of resources to support "bright ideas" wherever they arise.

The aim would be to prevent the process of conspiratorial research. The final decision on these special areas would remain with the UGC of its decisions so that the as which appeared to be nationally overlooked or unsubscribed. The flexibility to the biologists would add of the UGC which the working party provided an overall floor, for university research that was regarded as

The new committees would also be charged with the task of recruiting new blood where necessary. This identified as one of the most important problems facing universities, made more difficult by the climate of premature retirements and redundancy cuts. Data on the age distribution of academic staff is included in the report, and the working party says it is now quite common to find chemistry and physics departments where new members of staff have been appointed for five to 10 years. This has reduced the vitality and influx of new ideas in research, but also threatened the basic health of disciplines themselves.

The working party admits that it will only be able to secure more money for research through reductions in staffing, "which implies a practice that a larger number of numbers is required to create the room for recruitment." It recommends the UGC and research councils to explore ways of providing terminal assistance in recruiting new blood. In the longer term universities are urged to review academic career structures, particularly the "difficult point of tenure" and the mobility of junior staff.

To help alleviate the effects of the report recommends the research councils should be prepared to differ locations in particular cases of hardship. It also calls for a study of the balance of research supported by the research councils.

Other recommendations in the report are for the value of research awards made by the research councils to be maintained, for funds to be high priority and for greater collaboration between universities in appropriate disciplines and local government departments and universities. Finally the report calls for stronger university links, and for improvements in the collection of data on external funding of university research.

Report of a joint working party on the Support of University Research, Command 8567, HMSO price £4.35.

Why the dirty-hands image may survive



Students of engineering: the aim was to create an elite

Karen Gold describes the financial plight of the National Engineering Scholarship scheme

A secret £110,000 Treasury hand-out last year saved the prestigious National Engineering Scholarship scheme from defaulting on its commitment to 200 students.

But the scheme now faces temporary closure, if one of its two sponsoring partners, the engineering industry, cannot find another £100,000 by the end of July.

Since 1978 when the then education secretary Mrs Shirley Williams drew up the scholarship plan, an increasing number of aspiring sixth-form engineers have applied for £500 tax-free scholarships for each year at university, in addition to their mandatory grants.

Half the money was to be provided by companies employing engineers, the other half by the Department of Education and Science, on a pound for pound basis. The plan was to create a student engineering elite of around 500 each year: potential top managers who would revitalize ailing British industry.

Unfortunately, British industry has felt itself to be ailing too much to come up with the money. To provide 500 scholarships every year would cost it £375,000, with an equal amount coming from the Government.

By October last year, when the latest batch of 298 scholars started, industry had only managed to raise about £130,000. If the DES had stuck by its pound for pound principle, over 200 students who had been promised £500 would have received nothing.

Instead, the DES applied to the Treasury for the extra needed to give money to all 720 scholars now at university - 1979, '80 and '81 intakes of 159, 263 and 298 respectively.

But by this summer, with the target intake now down to 300 students a year, industry had still not raised more money, the Government has returned to its pound for pound policy, and the scheme can just

afford to pay its current scholars if no new ones are taken on this October.

Press releases and notices to schools went out at the beginning of this year, saying that 300 scholarships would be available this autumn. Applications closed at the end of January; last year there were almost 1,200; this year's are unlikely to have been fewer.

The extra money needed is almost £100,000 and must be promised by companies before the end of July for the lengthy interviewing process to be set in motion this year.

Otherwise, it could be put in cold storage until next summer when the 1980 intake leaves, at which point 200 new scholarships could be awarded.

But at the launch of an appeal to industry last week, the scheme's action committee chairman and former director of GKN Mr Oscar Hahn, insisted the scheme must continue this year, and - like the DES - was

ambiguous about what would happen if it did not.

"It would be a disaster if no new scholarships were to be awarded this year," he said. "I believe it would be wrong for the Government to take over this scheme, and I believe industry must show it can collect a further £100,000 to prove it is interested in the scheme."

Sir Peter Matthews, president of the Engineering Employers Federation, is to write to 150 large firms asking them to support the scheme immediately.

Later this year small and medium sized firms, who can provide the commercial sponsorship for one student with £750, will be contacted by the EEF's regional organizations, partly to ask them for money but also to make them aware of the scheme's existence, Sir Peter says.

But the main difficulty in raising the money, says Mr Hahn, has been in persuading small and large firms alike to invest in something as long-

term as three-year scholarships which then do not appear to be of benefit to them directly. That, coupled with the recession, largely accounts for the shortage of money.

It has crept up on the scheme slowly. The early supporters, which included both large public companies (ICI, Ford Motor Company, Unilever) and nationalized industries (BNOC, the National Coal Board, British Gas) numbered around 40 and gave £90,000 between them. By last year there were over 70 companies, but the income had only risen to £130,000. Each of the new companies was only giving an average of half as much.

Five companies pulled out because of financial difficulties: British Leyland, British Steel, Timex, Motherwell Bridge Engineering and Ransome, Hoffmann, Pollard. Their decision however is seen as less significant than the gradual decline in donations.

Administrative costs of the scheme, which include the efforts made to interest schools and careers teachers as well as day-to-day running, are borne by the DES. Industry provides interviewers for the 20 or so boards that grill candidates on their commitment to engineering, and to manufacturing industry.

The quality of the candidates is high, according to Mr Hahn, and many of them go to Cambridge or Imperial College, London. The scheme is meant gradually to become a mark of prestige rather than to lead to a decisive increase in income, which saves companies and government to some extent from the fear of keeping the £500 level with inflation.

The idea is to clean up the dirty-hands image of engineering among schools and pupils alike. Some of the current A level candidates are probably less concerned with the cleanliness of industry's hands, than with how deep it puts those hands into its pockets.

Europe's students may soon unite, writes David Jobbins

Union is seeking a home

The need for a joint office to be a focus for the exchange of information between western European's student unions is so obvious it is hard to see why one has not been set up long ago.

That the idea was only suggested two years ago, and discussions among the nine national unions principally involved have so far not produced a constitution or reached agreement on finance and location, only illustrate the complexities of student politics even in the relatively stable countries of western Europe.

European student leaders are now expected to make decisions on a constitution when they meet in Stockholm in the autumn. By then, after informal talks in the Swedish capital earlier this month, the related picture may be clearer, and the related question of where the bureau should be based closer to resolution.

The national unions already have extensive bilateral arrangements, and the task of the bureau would be to weave these into a web for gathering information, recruiting it and possibly mounting European-wide campaigns on issues such as racism and fascism.

The Scandinavian countries, isolated from the embryonic information links being built within the European Economic Community, favour the proposal. operating in national government departments and universities. Finally the report calls for stronger university links, and for improvements in the collection of data on external funding of university research.

bureau could not be achieved in the European Meeting," says Bjorn Sundstrom, international affairs president of the Swedish national student union, SFS.

"We want to get away from bureaucratic meetings dominated by issues of foreign policy to discussions on specific student demands."

"While the European Meeting does deal with educational topics it tends to be overshadowed by differences of opinion on foreign policy matters."

So disenchanted is SFS with the European Meeting that for the first time since it began in 1972 it will not be sending representatives to this year's meeting in Minsk next week. Nor will the Swiss union, VSS.

The Swedes, who pulled out of the Prague-based International Union of Students in the 1950s, say they are not interested in creating a new international organization and instead are concentrating on western Europe, where there are broader similarities and fewer major political differences.

"It is better to try to meet the needs of the west European unions and we believe the idea of the bureau is the way to go," Mr Sundstrom said.

The British National Union of Students (NUSUK) - which still works within IUS - feels that the bureau should not detract from what it sees as the European Meeting's main role, to promote détente.

But it put forward a set of proposals for the bureau which were generally agreed in the informal talks earlier this month.

NUSUK's outline said there were common features of west European political economic and social life which affected education; that there were already a number of inter-governmental agencies operating in Europe (the EEC and Council of Europe) prominent among them, which have a greater or lesser impact on education; and that there was scope for joint work on issues such as women's rights and the re-emergence of racist and fascist orga-

nizations which although not exclusive to higher education were areas where student unions have an important role.

Although the membership question remains to be decided, one principle appears to be settled - that there should be only one representative for each country.

This stipulation pinpoints a further difficulty with political overtones. For France has two organizations both commanding about 35 per cent of the student vote following a split in the aftermath of 1968 when the Communists and Trotskyites went their separate ways.

But it will be up to the two organizations to reach a compromise between them if the bureau gets off the ground.

NUSUK is wedded to the concept of political pluralism in the student movement, and feels an explicit statement enshrining this may need to be drafted in the bureau's constitution.

Although finance is still an obstacle, NUSUK has said the bureau could represent all its members collectively at events organized by third parties, thereby creating a major saving.

The cost of the bureau is not thought to be high, and both the Swedish Government and opposition have expressed interest - but with a major and predictable string attached.

It is thought likely by Swedish student leaders that whichever party wins the forthcoming general election it would be a requirement of any financial support that the bureau should be in Stockholm.

Although details will not be disclosed until October, other student unions prefer Strasbourg, where the Council of Europe and other allied organizations are already based. There is likely too to be uncertainty about taking money from government or other official sources. Providing these questions are settled, the formal decision to go ahead could be taken by the end of the year.

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# Ulster: the case for the defence



Paul McGill reports on attempts by the New University of Ulster and the Association of University Teachers to demolish the findings of the Chilver report



Dr Cockcroft (left) said the report by Sir Henry (right) was "unbalanced and misleading"

There seem to be few expressions of insult in the academic vocabulary which have not been levelled at Sir Henry Chilver's report on higher education in Northern Ireland.

The latest tirade came last week from the New University of Ulster, which condemned the report of Sir Henry's Higher Education Review Group as "intellectually shoddy".

The university claims that the report, published in March, grossly misinterpreted the statistics, is unimpressive and often plainly superficial and "comes close to distortion and a demonstration of prejudice".

The response received the stamp of approval of vice-chancellor, Dr William Cockcroft, who said the Chilver report was "highly unbalanced and misleading", providing neither a comprehensive view of present provision nor a detailed consideration of the community's needs in the 1980s and 1990s.

Last month, the NUU branch of the Association of University Teachers described it variously as "shallow and incompetent", "completely inaccurate", "ill-considered", "irresponsible", "haphazard", "unsound", and "almost wilful".

The criticisms are severe but why bother as Chilver was overruled on publication day by the Government's decision to merge NUU with Ulster polytechnic? There are three main reasons.

First, staff at Coleraine have been generally annoyed at criticisms in the final report. They found it pretty damning. As the review group sat for more than three years, the university sees no reason why it should be prevented from replying and has several good reasons for putting its defence.

Second, the Government endorsed the final report. Essentially it agreed that NUU was guilty and merely substituted a different sentence. The Government report accepted Chilver as a "well-documented and reasoned thesis" which showed that NUU faced increasing problems of financial and academic viability ruling out the continuation of the status quo and leaving closure as the only alternative merger.

NUU felt that Chilver formed the Government's justification for merger with the polytechnic.

So if NUU wants to oppose the merger, it must demolish Chilver. Even if it accepts the merger, it must

still attack Chilver's credibility.

A third reason why the university may be keen to respond is that the chairman of the University Grants Committee, Dr Edward Parkes, also implicitly endorsed the criticisms. Certainly he explicitly accepted the thesis that more radical measures than were suggested by Chilver were necessary.

It is known that Dr Parkes and people within the UGC knew about the merger proposal at an early stage and were keen on it. It represented a good opportunity to experiment with a trans-binary institution; with the experience gained they could build their empires in the event of similar changes on the mainland.

Dr Parkes has had the opportunity to join in the condemnation of NUU without having to justify himself. Unlike Chilver and the Government, he did not have to give any reasons. The point is important since the UGC has been given a key role in settling academic guidelines for the merged university and for advising on its funding. It is performing these tasks after the chairman has stated publicly that one of the partners is a failure.

The responses from NUU and the AUT complain that the Chilver

group did not address itself properly to future demands. The university is astonished that the group uncritically assumed that 30 per cent of local students would continue to go elsewhere.

Behind this lies the fear that changes like the introduction of a mixed scheme of loans and grants, regularization of intake or continuing cuts in intakes across the water, could lead to far more wanting to remain. Opportunities for school-leavers and mature entrants would be reduced if the capacity of local institutions was lowered as well.

The AUT document, written by Ms Norma Reid, notes that student emigration from Northern Ireland has declined by 10 per cent over the last five or eight years.

If this falls a further 5 per cent and the intake of students from Britain rises by 300 per year, Northern Ireland will need 15,000 student places. "Since Queen's University, Belfast is already near capacity, the arguments for a second university remain sound," she concludes.

Linked with this is the question of NUU's failure to attract students to the extent envisaged in the 1960s. The documents point again to the effects of the Troubles; to Lock-

wood's failure to estimate student flows correctly; to the Government's cuts in teacher education; to the effects of criticisms aimed against the fledgling university; and the damage allegedly caused by the leaks from and speculation over the Chilver report itself. The university authorities managed to increase enrolments, apart from teacher education, and enjoyed a particularly big boost last October.

Both documents reveal offence at the apparent denigration of academic standards and draw a clear distinction between entry requirements and the quality of the finished product. The authorities record that the university has awarded 123 first-class honours degrees and 1,335 second-class, first division. Standards are jealously guarded and guaranteed by the appointment of 55 external examiners, they claim.

Ms Reid comments that the large number of good degrees and the relatively low failure rate are remarkable achievements, given the prospect of accepting many mature students and students without A-levels. "Against this background, NUU could reasonably have expected to be congratulated, rather than criticized,

for its academic standards." The responses deal in some detail with Chilver's claims about high costs, especially in maths, biology, sciences and arts. The university's "revealing" difference in the treatment of itself and Queen's. Chilver describes the ratio of one and a half to 8.5 students as "above the Great Britain university average of 9.3," but it concludes that NUU has excess teaching capacity generally on an almost identical ratio of 1:8.4.

Using the latest published data on costs and student numbers, it concludes that Coleraine is more cost-effective than the average British university - "a notable achievement for a new university operating in the difficult conditions of Northern Ireland". It finds that the ratio at NUU was 8:1 in December, 1978, compared with a UK average of 9:1.

It lists the total cost per full-time student equivalent as £2,454 in 1977-78, somewhat more than the comparable universities of Essex and Stirling, but about £300 less than Queen's and £532 less than the overall average.

NUU gives one reason why its figures should have been set off the mark, namely his failure to take account of crossover teaching. This issue is elaborated by Ms Reid who explains that the report cited NUU with 32 students of mathematics, taking a total of 30 courses. But, bearing in mind that the department services students studying in other subjects, the true total should be 385.

Academics in Coleraine have been particularly hurt by the comment that the evidence received showed that the university was not seen as a vital element in the community.

The university's response argues that all its teaching contributes to the community, particularly nursing and law, social work education, courses on press and the media and the continuing education.

It also mentions, among other research on protein food supplements; the freshwater research laboratory at Lough Neagh; research on staffing in the health services; projects on housing, poverty and economics; consultancy work in sales computed over 100 projects; the Riverside Theatre which serves a whole hinterland and a wide range of cultural and sporting activities.



Rutherford: bombarding the atom

This year marks the fiftieth anniversary of the discovery of the neutron. To the physicist, this is one of the most significant events in scientific history, completing the essential foundations of classical nuclear physics and laying the groundwork for an understanding not only of "normal" material phenomena but of the stars themselves. To mankind, the appearance of the neutron, initially an academic obscurity, has provided the key to an enormous power for controlling human destiny, whether for affluent survival or absolute destruction.

The scientific significance of the neutron and its impact on our historical destiny are inextricably woven together, and this can best be appreciated by reviewing the development of atomic and nuclear physics up to the discovery of the neutron and the decade or so beyond. The original concept of an atomic basis to matter can be found in the great era of Athenian thought, but the real incorporation of the idea into modern science is due to an English chemist, John Dalton, in the early nineteenth century, who saw in the unifying explanation for the proportions in which chemical elements react to form compounds. By the third quarter of the nineteenth century the idea of atoms as the basic, apparently indivisible units of a limited number of chemical elements had gained currency in the field of chemistry.

In the meantime, the science of physics was in full cry on the assumption of the continuous nature of matter and force fields. But in the closing years of the century discoveries were being made that would lead into the world of modern atomic, nuclear and, eventually, subnuclear physics. These were the discoveries of X-rays by Röntgen, of radioactivity by Becquerel, and of the electron by J. J. Thompson. Building upon these discoveries, the pioneers of radiochemistry, the Curies, found previously unknown, highly radioactive elements, polonium and radium, which the young New Zealander, Ernest Rutherford used to start the new science of nuclear physics.

Rutherford and his colleagues first explored the nature of radioactivity. They found that a radioactive element spontaneously transmuted itself into a different element, thus violating a basic tenet of nineteenth-century chemistry: an atom, it appeared, was not indestructible. Rutherford's line of research was to use the radiation from radioactivity as a tool to bombard the atom and explore its structure. Within the first quarter of the twentieth century a model of the atom was built up that can be summarized as containing two basic kinds of constituents, the electron and the proton. The electron was very light, only one eighteenth-hundredth of the mass of the proton, and carried a negative electrical charge. The proton was positively charged, the magnitude of the charge being the same as that of the electron. The protons, and hence virtually all the mass of the atom, were clustered together in a very small nucleus, the volume of which was less than one billionth of that of the whole atom. It was also thought that some electrons were contained in the

# The discovery of the neutron

Eric Lynn describes the path which led scientists to one of the most important events in the history of physics



Chadwick: examining radiation

Joliot's penetrating radiation was an electrically neutral particle of about the same mass as the proton. It appeared to be the elusive neutron. Chadwick's short paper announcing the result in *Nature* on February 27 1932 and his definitive paper on the discovery of the neutron was received for publication in the *Proceedings of the Royal Society* on May 10 1932. For this work he received the Nobel Prize for Physics in 1935.

By 1932 the intellectual climate had undergone a revolution even more fundamental than that of the original quantum theory that dictated the Bohr atom and postulated that energy was not infinitely divisible but had to be parcelled out in packets called quanta, just as matter was parcelled out in atoms. The new quantum theory, founded by Schrödinger and Heisenberg, based on abstract mathematical formulation of the laws of motion on a principle of uncertainty connecting space and momentum at the submicroscopic level. The consequences of the new theory were vigorously worked out for atomic systems in the next few years and revealed effects, amply verified by experiment, that could not exist within the familiar laws of classical physics. Among these was the realization that Rutherford's concept of the neutron as a combination of proton and electron within the nucleus did not agree with the spectra of light emitted by excited atoms. The neutron in fact was a distinct particle, exactly on a par with the proton, and to be regarded at that level as one of the two basic building blocks of nuclear matter. The fact that the neutron was subsequently found to be radioactive, emitting an electron as it decayed into a proton, did not alter this view. Indeed, it led to the hypothesis, now substantiated of yet another, much lighter particle, the neutrino.

Although Rutherford subsequently published very little about this idea it remained at the centre of Cavendish thought. It seemed particularly convincing to James Chadwick, Rutherford's principal lieutenant, and the search became one of his personal scientific goals in these years. By the late 1920s Chadwick was firing energetic alpha-particles into beryllium. Both he and Becker, working on a similar project in Germany, reported their results in late 1930, indicating the production of a very penetrating radiation.

At this time the clouds of impending war were dark over Europe. Meltner and Frisch's letter on the phenomenon of nuclear fission was published in *Nature* on February 11 1939. Bohr and Wheeler's paper on the structure of the proton and neutron themselves along with a host of exotic but related particles of different mass, electric charge and new properties like *strangeness*, *charm* and *beauty*, together with all the corresponding properties in antimatter. Physics had gone on to new levels of explanation at which the neutron, the forerunner, apparently sinks its identity; but this is a world we cannot directly experience, a world of abstract complexity and paradox which can only be created here on earth by accelerators of extraordinarily high energy. Power is the legacy of Chadwick's discovery, both a boon and a threat.

Although some understanding and appreciation of this new frontier of science did penetrate outside the

laboratory to the educated public, in general the vibrant excitement in this period of nuclear physics was confined to the academic scientific community. It was realized that enormous energy was involved in the binding together of nuclear constituents, but any thought of this being exploitable was unimaginable. Bohr's "moonshine" declared Rutherford. Then in 1938, the first discoveries were made that were to give the neutron its crucial significance in the modern world. Experiments on the absorption of slow neutrons by uranium had yielded a number of unidentifiable elements, believed to be new elements heavier than uranium.

After much heavier work, the German radiochemists, Hahn and Strassman, announced that one of these new transmuted elements was chemically indistinguishable from barium, an element of about half the weight of uranium. This astonishing result was communicated to Lise Meitner, an Austrian scientist living in Sweden, and she and her nephew Otto Frisch, then working at Niels Bohr's great centre for theoretical atomic physics at Copenhagen, spent a wintry weekend discussing its implications. Eventually they realized that the very heavy nuclei like those of uranium are close to the limits of stability. The neutrons and protons of such a nucleus would be much more tightly bound if they could be formed into smaller nuclei. If the heavy nucleus could do this by splitting, like a liquid drop, the two fragments would electrically repel each other and fly apart with great energy. But the heavy nucleus needs at first to be given some energy to initiate its splitting. The slow neutron was sufficient for this purpose, at least for the lighter, rarer isotope of uranium (uranium-235). The process of nuclear fission had been discovered.

Many applications for these neutrons outside nuclear weapons and nuclear power research were found. The slow neutron had an ideal wavelength for exploring the regular patterns of atomic arrangement inside crystals; they could also be used as a form of chemical analysis for trace elements by identifying the characteristic radiations from the transmutations that they induce. As well as its importance in medicine (for treating cancer tumours) and geology (for the exploration of mineral deposits), the neutron still has an important role at the frontiers of pure science. In cosmology and astrophysics the neutron plays an important part in the synthesis of heavy elements in stars and in the later stages of gravitational collapse when a star has exhausted all its nuclear energy (the "neutron star"). Nuclear physics has itself evolved into the study of particle physics, the study of the structure of the proton and neutron themselves along with a host of exotic but related particles of different mass, electric charge and new properties like *strangeness*, *charm* and *beauty*, together with all the corresponding properties in antimatter. Physics had gone on to new levels of explanation at which the neutron, the forerunner, apparently sinks its identity; but this is a world we cannot directly experience, a world of abstract complexity and paradox which can only be created here on earth by accelerators of extraordinarily high energy. Power is the legacy of Chadwick's discovery, both a boon and a threat.

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Although some understanding and appreciation of this new frontier of science did penetrate outside the

# Philosopher of violence whose theories were put to the test

The opening last week of the trial of a Marxist philosopher for a range of terrorist acts began a crucial round in Italy's battle against political violence.

Toni Negri, a lecturer in the doctrine of the state at the University of Padua, is the leading theoretical exponent of Autonomia Operaia, an extremist urban guerrilla organization that drew vast support in the late 1970s from university students and school pupils.

Negri's trial is being held in a converted sports stadium in Rome, a building specially fortified and ringed by armed guards for terrorist proceedings.

The 48-year-old author of a series of books on political thought and 78 different offences including "armed insurrection and civil war" and "membership of an armed band". However, all but two of the accused, who are known collectively in the Italian press as "The April 7 Group" after the day police arrested them in 1979, refused to appear in court last week.

Previously Negri had protested bitterly at his wait for trial for more than three years in high-security jails. Alarmed by the length of the wait, Amnesty International is deciding whether to adopt some of the defendants as prisoners of conscience.

In an annual report, the International Human Rights Organization criticized the Italian government for what it called "excessive" periods of pre-trial detention.

Aspects may be held for up to half the minimum impossible sentence before trial, thus rendering some people theoretically liable to up to 10 years "preventive detention" before being judged.

What is surprising is not so much

that a respected academic should be hauled on trial as that Negri escaped the police for so long. His philosophy, as least as popularized by the so-called autonomists, was a straightforward glorification of political violence.

Negri's philosophy was undoubtedly one reason why anti-terrorist experts said that the roots of Italian left-wing terrorism lay embedded in Italian universities.

Negri's supporters, by contrast, claim that Il Professore was merely an ideologue with no direct participation in the autonomists' expropriation of his elegant Marxist theorems. In an earlier trial Negri was cleared of alleged participation in the kidnap and murder of Aldo Moro and it is suggested the lecturer has become the victim of a witch-hunt.

Negri has denied all charges, and did not even declare himself a political prisoner as jailed Italian left-wingers usually do.

Walter Tobagi, a journalist who wrote investigative pieces on terrorism for the *Corriere della Sera*, and who was subsequently shot dead by a left-wing gang reportedly associated with Negri, wrote: "Of all the leaders of Autonomia, Negri was the one who put himself on display the least."

Tobagi said that Negri was also an enigma because he never made clear whether his theories were intended to be carried out or were merely exercises.

Negri's Autonomia was born in 1973 out of the rump of an extraparlimentary group known as Worker's Power. On the surface at least it appeared to devote itself to legal and peaceful agitation in factories, schools and universities.

But by the late 1970s a self-styled "armed party" of Autonomists broke away from the main group and dubbed itself the P38 after the most



Toni Negri, victim of a witch-hunt common handout on sale on the Italian black market.

Hundreds of teenagers wearing bolachava helmets and ski-masks fought gun-battles with police during their called to oppose university reforms.

By now Italy's secret services were already making regular surveillance of Negri. They had received reports of the lecturer meeting with Red Brigades founder Renato Curcio; but no hard evidence against him immediately appeared.

In any case Negri's academic credentials seemed impeccable. A research projects in Paris, Rome and Tübingen in Germany.

During the Italian "hot autumn" of mass student protests and industrial disputes the "holy-haired, bearded" Negri reportedly roared at Milan factories. He became a mil-

itant leader of Worker's Power, a Maoist group, several of whose members went on to join the Red Brigades or its splinter.

But as Walter Tobagi wrote: "Negri's revolutionary vigour seemed merely an intellectual abstraction rather than an exact political project."

In 1973 Worker's Power split into an array of inter-linked ultra-left groups including Worker's Autonomy.

Meanwhile Negri was beginning to make an impact on his students with the notion that society had "lost all rationality" and therefore "justified" the use of violence by its opponents.

Developing his views in a collection of essays, *The State Form*, and in a booklet, *Domination and Sabotage*, Negri argued that Italian leftists should "reject work" as a Marxist duty. "Our duty is the theoretical restoration of the rejection of work to the plans, tactics and strategy of communists," Negri wrote.

Obscure for the layman, and pilloried by the press as "the prophet of no works," Negri nevertheless drew acclaim in Paris among fashionable counterparts including Gilles Deleuze, Félix Guattari and Michel Foucault.

Negri was gaoled in 1979 after former statements made to police by state evidence.

A convicted criminal named Carlo Casarri claimed he was recruited by Autonomia to organize bank raids to stay in Negri's home frequently irritated when the former convicted argued that "all property was abolished" and took over Negri's bed-room.

"Negri was the man through whose hands everything passed," Casarri was quoted as saying. "He was

our Jesus Christ."

Carlo Sironio, a wealthy young Italian of left-wing sympathies who Negri was said to be courting to make financial donations to Autonomia, died after his abduction allegedly by Negri's agents - sociologists overindustrialized anaesthetized by him during a bungled kidnap operation on April 15, 1975.

Police gathered a huge file of similar allegations from a host of witnesses, most of them middle-class, some of them like Mauro Baccantini, the administrative director of Milan's Catholic University, from the same academic background as Negri.

From special prisons for terrorism, Negri maintained his work output, writing, for example, a book on Spinoza well-received by Italian critics.

Last year he wrote an open letter to his "dear little brothers," the Autonomists of Padua, in which he accused them of being "pathetic little Bolsheviks stuck in a time warp."

Negri's *volte-face* probably dealt the death blow to the rump of Autonomia, which is no longer regarded as a significant political force.

"Negri has never abandoned armed struggle," said Angelo Ventura, a history lecturer and a member of Italy's socialist party who was shot in the knees by an Autonomist student. "He seems to have made a strategic withdrawal to await better times."

Negri this month said he was not partially pessimistic about the future of the affair.

"Nothing good will emerge as far as I am concerned," he said in an interview with a Rome daily newspaper. "The judicial machine will mangle me up. But I am optimistic about the significance that the April 7 trial could have... for the restoration of judicial guarantees."

John Phillips

nucleus, giving, with the protons, a net positive electrical charge called the atomic number (the unit being a single proton charge). In the virtually empty space surrounding the nucleus an occasional electron could be found, moving in a kind of planetary orbit around its nuclear "sun". In a normal, electrically neutral atom the number of these orbital electrons was equal to the atomic number; since these governed the interactions of atoms with each other, the atomic number was therefore characteristic of an element. The stability of the electron orbits was originally a source of difficulty. Under the laws of classical physics these electrons should have been pulled down into the nucleus by electrical forces. The difficulty was turned into a revolutionary cornerstone of modern physics up to the discovery of the neutron and the decade or so beyond.

The original concept of an atomic basis to matter can be found in the great era of Athenian thought, but the real incorporation of the idea into modern science is due to an English chemist, John Dalton, in the early nineteenth century, who saw in the unifying explanation for the proportions in which chemical elements react to form compounds. By the third quarter of the nineteenth century the idea of atoms as the basic, apparently indivisible units of a limited number of chemical elements had gained currency in the field of chemistry.

In the meantime, the science of physics was in full cry on the assumption of the continuous nature of matter and force fields. But in the closing years of the century discoveries were being made that would lead into the world of modern atomic, nuclear and, eventually, subnuclear physics. These were the discoveries of X-rays by Röntgen, of radioactivity by Becquerel, and of the electron by J. J. Thompson. Building upon these discoveries, the pioneers of radiochemistry, the Curies, found previously unknown, highly radioactive elements, polonium and radium, which the young New Zealander, Ernest Rutherford used to start the new science of nuclear physics.

Rutherford and his colleagues first explored the nature of radioactivity. They found that a radioactive element spontaneously transmuted itself into a different element, thus violating a basic tenet of nineteenth-century chemistry: an atom, it appeared, was not indestructible. Rutherford's line of research was to use the radiation from radioactivity as a tool to bombard the atom and explore its structure. Within the first quarter of the twentieth century a model of the atom was built up that can be summarized as containing two basic kinds of constituents, the electron and the proton. The electron was very light, only one eighteenth-hundredth of the mass of the proton, and carried a negative electrical charge. The proton was positively charged, the magnitude of the charge being the same as that of the electron. The protons, and hence virtually all the mass of the atom, were clustered together in a very small nucleus, the volume of which was less than one billionth of that of the whole atom. It was also thought that some electrons were contained in the

laboratory to the educated public, in general the vibrant excitement in this period of nuclear physics was confined to the academic scientific community. It was realized that enormous energy was involved in the binding together of nuclear constituents, but any thought of this being exploitable was unimaginable. Bohr's "moonshine" declared Rutherford. Then in 1938, the first discoveries were made that were to give the neutron its crucial significance in the modern world. Experiments on the absorption of slow neutrons by uranium had yielded a number of unidentifiable elements, believed to be new elements heavier than uranium.

After much heavier work, the German radiochemists, Hahn and Strassman, announced that one of these new transmuted elements was chemically indistinguishable from barium, an element of about half the weight of uranium. This astonishing result was communicated to Lise Meitner, an Austrian scientist living in Sweden, and she and her nephew Otto Frisch, then working at Niels Bohr's great centre for theoretical atomic physics at Copenhagen, spent a wintry weekend discussing its implications. Eventually they realized that the very heavy nuclei like those of uranium are close to the limits of stability. The neutrons and protons of such a nucleus would be much more tightly bound if they could be formed into smaller nuclei. If the heavy nucleus could do this by splitting, like a liquid drop, the two fragments would electrically repel each other and fly apart with great energy. But the heavy nucleus needs at first to be given some energy to initiate its splitting. The slow neutron was sufficient for this purpose, at least for the lighter, rarer isotope of uranium (uranium-235). The process of nuclear fission had been discovered.

Many applications for these neutrons outside nuclear weapons and nuclear power research were found. The slow neutron had an ideal wavelength for exploring the regular patterns of atomic arrangement inside crystals; they could also be used as a form of chemical analysis for trace elements by identifying the characteristic radiations from the transmutations that they induce. As well as its importance in medicine (for treating cancer tumours) and geology (for the exploration of mineral deposits), the neutron still has an important role at the frontiers of pure science. In cosmology and astrophysics the neutron plays an important part in the synthesis of heavy elements in stars and in the later stages of gravitational collapse when a star has exhausted all its nuclear energy (the "neutron star"). Nuclear physics has itself evolved into the study of particle physics, the study of the structure of the proton and neutron themselves along with a host of exotic but related particles of different mass, electric charge and new properties like *strangeness*, *charm* and *beauty*, together with all the corresponding properties in antimatter. Physics had gone on to new levels of explanation at which the neutron, the forerunner, apparently sinks its identity; but this is a world we cannot directly experience, a world of abstract complexity and paradox which can only be created here on earth by accelerators of extraordinarily high energy. Power is the legacy of Chadwick's discovery, both a boon and a threat.

Although some understanding and appreciation of this new frontier of science did penetrate outside the

times, the  
circumstance 8 n.  
present time 121 n.  
time-saving

theory 973 n.  
higher education  
education 534 n.

supplement  
increment 36 n.  
augment 36 vb.  
adjunct 40 n.  
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## Criticism and creativity are not incompatible. Below An artist who practised what he preached

The current exhibition of paintings by Adrian Stokes at the Serpentine Gallery will be an event of major interest to the enlarged public his critical writings have won in the ten years since he died. The exhibition offers a unique opportunity to become acquainted with another aspect of his work and, to judge, with the help of a catalogue and book display, how close is the relationship between his writing and art.

Stokes started painting in 1936 when he went on a short holiday to Cornwall with his friend Adrian Kent, who was deputed to discuss with him the theory of colour, on which Stokes was then writing a book, and to teach him how to paint. The book appeared in 1937 as *Colour and Form*.

His first painting was begun on the lawn of the hotel at St Ives where the two men were staying. Later he converted it into a picture of the tennis court at his parents' house and depicted himself dragging the net into position while the painter Ben Nicholson looks idly on.

Stokes' last painting was finished only 36 hours before he died on December 15, 1972. He was gravely ill at the time, and his failing strength, his failing vision, ensured that he would never have been able to start on another painting had he lived. It completes a series of small still-lives, undertaken in the previous two or three months, which in their expressive hesitancy show how much the hand had by now internalized which it would have been well beyond the power of the mind or of the eye to initiate.

Stokes died a painter, but it is a significant fact about his painting that, when he turned to it, he was already recognized as a writer on the visual arts of great promise and total originality, and he did so - or so he liked to say - only because there was no one else around at the time who seemed prepared to paint as he had

become convinced that one should. Even if this remark is not to be taken with total literalness, it indicates clearly how strong a connexion between his painting and his views about visual art Stokes himself was ready to entertain, and it also raises the question of what these views were.

In the development of Stokes' aesthetic there are two crucial events which had a major formative influence upon its content: his experience of Italy, and his engagement with psychoanalysis.

It was in the winter of 1921-22, while he was still an undergraduate at Oxford, that Stokes visited Italy for the first time. In the largely autobiographical *Inside Out*, perhaps his finest book, Stokes has described the moment of emergence from the Mont Cenis tunnel, on the last day of the old year, and of entry into the "counter-landscape" of Italy - counter, that is, to the childhood landscape of Hyde Park and Kensington Gardens - and how he experienced this as a moment of rebirth.

Over the next decade Stokes returned to Italy often, sometimes for brief visits, but once spending several months in Venice. Mostly he was there with two friends, his aesthetic evolution: in 1924 with Osbert Sitwell - "the Sitwells", he wrote in a letter, "were the first to open my eyes" - and in the autumn of 1926, on the tennis court at Rapallo with Ezra Pound.

Stokes and Pound shared an enthusiasm for the Tempio Malatestiano at Rimini, which was then a much-neglected work. Later, when Stokes was completing his first book on Italian art, Pound wrote to his friend T. S. Eliot at Faber & Faber recommending publication. Eliot published two articles in *Criterion*.

What drew Stokes to Italy and what he drew from it, was the discernment of a highly specific value, or complex of values, which he noted in the work of certain great artists but also outside what was recognized as art. He found it in the work of Agostino di Duccio, Luciano Laurana, Alberti, and, on and off, Donatello and Verrocchio. Three great monuments of Renaissance art epitomized it: the Tempio, the Palazzo Ducale at Urbino and the city of Venice, "the city of stone and water" but Stokes also discerned this value in an old farm building in Tuscany and the Venetian and in the man-made landscape of olive terraces and vineyards. It was present (he wrote) in "the simplest architectural effect" which he went on to identify as "the completely satisfying progression from a cobble thoroughfare to the smooth base of a building that grows upward from it".

For this aesthetic value Stokes coined the term "Quattro Cento", the division into two words showed this value and any particular period of art, even if the paradigms were to be found in early Renaissance works of art and architecture. He called his first book on Italian art *The Quattro Cento* (1932). In it he articulated this value into several aspects: love of stone, explicitly untraced with mere "attention" to stone; mass-effect, this time contrasted with the "massiveness" of baroque architecture, and meaning the way a facade or profile counteracts itself in a finish; the love - not the mere use - of perspective, meaning the way in which perspective repairs a surface which spatial representation has disintegrated; and, finally, and most elusively, the emblematic, or the effortless and moving inner feeling and motif, as though the feeling had been squeezed out from the stone which reposed into sumptuous architectural or sculptural details.

In his next book, *The Street of*

## The Scottish Puritan and

Writing in 1887 about a portrait of Sir William Stirling Maxwell, John Gray, the Scottish art historian, remarked that while it was probably the best of very few, it was nevertheless "far from being a wholly satisfying likeness, missing as it does much of the picturesqueness and the powerful individuality of the face. . . . It is greatly to be regretted that we have no more fully adequate memorial of this eminent Scotsman than whom few indeed of our own times have been worthy of perfect portrayal and continued memory."

When Gray wrote, nine years after Stirling Maxwell's death, Sir William's claims on "continued memory" were indeed impressive; all the more surprising, then, is the relative neglect into which his work has fallen. His publications - and privately printed books covered a wide range which embraced fine art, poetry and Spanish bullfight. For all his impressive literary output, it is as an art scholar and collector that he deserves to be remembered; in particular for his pioneering contribution to the understanding of Spanish art in Britain. He was only 30 when his three-volume *Annals of the Artists of Spain* was published, the first major history of Spanish art in English. His own collection of Spanish pictures contained works by about 50 different artists, at a period when only Murillo and Velazquez carried any guarantee of fame.

Interest in Spanish and Spanish art had been growing in Britain since the Peninsular Wars, with the French and Napoleon's troops across the Pyrenees in 1808, many Britons fell a bond with the Spanish people which united them in a mutual dislike and hatred of the French.

Export of Spanish pictures had

romantic generation of travellers. Stirling Maxwell's social background is not his place of birth, some way toward explaining his taste for the exotic. He was born William Stirling in 1818, the son of Archibald Stirling of Keir and Cawdor and Elizabeth Maxwell of Pollok, near Glasgow. When he inherited his father's estates in 1847, he became a landowner of considerable wealth and influence. He acquired the title Sir William Stirling Maxwell on the death of his uncle, the owner of the Pollok estate.

In 1852 he was elected Conservative MP for Perthshire. In politics he was described as moderate but deep-seated conservatism changed his resistance to "change for change's sake", as he saw Mill's ideas. Nevertheless, he was not entirely averse to radical change and in 1872 joined the controversy over women in the professions by supporting the claims of Edinburgh's women medical students. Higher education in Scotland was one of his abiding concerns towards the end of his life, he was elected rector of the universities of St Andrews and Edinburgh, and became chancellor of Glasgow.

He also served on governmental committees concerned with the British Museum, the National Gallery, the National Portrait Gallery. He held strong views on the educational function of national collections and their duty to collect representative works from all schools, regardless of current taste. By the time his *Annals* were published in 1848, he could claim that "the private collections of England could probably furnish scarcely a gallery of Spanish pictures second only to that of the Queen of Spain. Nevertheless, writing 1846, he complained of the very narrow collecting policy of the National Gallery, where Murillo alone had



Sir William Stirling Maxwell: first collector of Goya's work, taken place prior to the nineteenth century but most of the major works, commissioned by the Church or the Court, had remained in their original settings. During their years in the Peninsula, the French army radically altered the situation by looting art treasures on a wide scale to supply the private collections of Napoleon's generals. Dealers and collectors' agents soon followed the French army into the Peninsula: armed this time with guineas, as Sir William noted.

The traditional Grand Tour had the favoured route, was frequently country with little to offer the cultured British traveller educated in the classical civilizations. Spain's geographical isolation had, however, served to heighten and preserve her cultural distinctness and in the nineteenth century this became increasingly attractive to a more

## Richard Wollheim looks at Adrian Stokes and, Hilary Macartney at Sir William Stirling Maxwell



Adrian Stokes: catholic taste. Rimini (1934), a work expressly devoted to the Tempio, Stokes hit on a way of unifying and explaining the various aspects of marks of the Quattro Cento. He did so by reviving the traditional distinction between the carving and the modelling traditions, and then pronouncing Quattro Cento art to be the art, the quintessential art, of the carver.

However, for this equation to be more than mere phrase-making, Stokes was set two problems, and the rest of his critical output may be seen as the attempt to resolve them. In the first place, in the equation "carving" is used in an extended or metaphorical sense, and the first problem is, not of course to paraphrase, but to say something that would elucidate, the metaphor. In his next book, which was *Colour and Form*, the book he was working on at St Ives, Stokes confronts this problem head-on by tracing the carving tradition as it runs through painting, Piero della Francesca, Breughel, Giorgione, Chardin and Cezanne were all carvers. Stokes later added the names of Georges de la Tour, Vermeer and Picasso. Yet none of them touched a chisel. So what Stokes had to do and what he did, was to construct for painting - more specifically, for painting on its curvilinear side - marks of carving which could be recognized as analogous to those he had identified for architecture and sculpture.

These turned out to be the use of colour in a way that held forms in balance rather than accentuated one at the expense of another, for which he thought that the employment of near-complementary colours was singularly efficacious. Luminosity, or the assignment to each form of its own inner light; and (parallel to mass-effect) the way in which the total organization of colour can be grasped immediately.

Secondly, in equating Quattro Cento art with the art of carving, Stokes had given some unity to Quattro Cento art by means of a contrast, but the other term of the contrast - that is, the modelling tradition - seems itself to be made up of disparate marks or aspects. Stokes enumerated flourish, fragmentation, a preciosity of finish, but on the face of it there seemed an

even greater difficulty in establishing a unifying or explanatory principle for these marks than there was for the marks of carving, and this is the second problem to which Stokes addressed himself in his later writing. To understand how he found an answer, it is necessary to turn to the second crucial event which formed his aesthetic development.

In January 1930 Stokes began psychoanalysis with Melanie Klein. One immediate consequence was that the Italian journeys were curtailed, but a longer-term consequence, which did not explicitly manifest itself until some time after the war, was the enrichment of Stokes' aesthetic theory by the account of psycho-sexual development codified in Kleinian theory.

Stokes had been interested in psychoanalysis ever since, as a schoolboy at Rugby, he had been introduced to Freud's writings by William Robson-Scott, and some shadow of Freud falls over the earlier books. The two semi-autobiographical masterpieces, *Inside Out* (1947) and *Smooth and Rough* (1951), are 'coloured' by Kleinian ideas, but it is in the six thin volumes that appeared between 1955 and 1967 - *Michelangelo, Greek Culture and the Ego*, *Three Essays on the Painting of Our Time*, *Painting and the Inner World*, *The Invitation in Art*, and *Reflections on the Nude* - that the synthesis of aesthetic and psychoanalytic thinking is truly affected. These books are abstruse, personal, and shot through with an amazing vividness of perception.

Central to Melanie Klein's theory is the identification of two phases of infantile life, which she took to underlie the libidinal phase of genitality. These phrases she called "positions" to indicate that, though their onset has a chronology they endure with varying degrees of resilience throughout life. The earlier phase is the paranoid-schizoid position, in which the infant's world is peopled with part-objects, fragmentary and transient, which are perceived either as all good, in which case they induce transient bliss or as all bad in which case they inspire terror and rage. The latter phase is the manic-depressive position, in which the infant, now aware of whole objects and consequently aware that the figure whom it has loved and the figure whom it has hated are in many cases one and the same, is ready to experience love and its concomitants, guilt, gratitude, and the desire to make reparation.

Stokes' insight was to associate these two positions, or rather their benign residues, with the two traditions of art. The association of the carving tradition with the manic-depressive position was more easily effected. In his devotion to the aesthetic ideal of the free-standing, self-sufficient work of art the carver could be thought of as celebrating the intact whole object. More imaginative was the association of the modelling tradition with the paranoid-schizoid position, and the way Stokes did this had the result both of unifying the different aspects of the modeller's art - the outstanding problem - and of enhancing its significance and standing.

The seemingly disparate aspects of modelling could be seen, Stokes argued, as various ways of bringing about a single effect, that of merging with the object or envelopment, and

## the Spanish saints

affected an entrance". For all his later success in public life, Sir William's early political aspirations were frustrated. As a young man fresh from Cambridge and the Grand Tour, he was disappointed to be rejected as candidate for his native county. At the time, the world of politics lost less than the art world gained; to recover his spirits, he set out on another long trip in 1841 not returning for two years.

In Spain he stumbled across a field of research almost untouched by other scholars and worthy of his very considerable intellectual powers. He often enough expressed an uneasiness about those, including himself, whose privileged circumstances allowed them to dabble in scholarly pursuits. His reservations perhaps explained why, when he embarked on his investigations in Spain, he did so in such a crusading spirit.

Of all his works on Spain, the *Annals* were undoubtedly the most important and became the standard work on Spanish art in any language. His chief innovation was the rigorous historical approach. This obliged him to consider all the artists and could be more readily appreciated by the uninitiated than the more idealized products of Italian art. To some, of course, this very directness was offensive.

The Spanish pictures formed the largest and most important part of Stirling Maxwell's collection, although he also displayed his advanced and unusual taste in collecting pictures by William Blake, who was not popular with critics and collectors until much later. He was one of the earliest British collectors of El Greco and one of the very first to write about and collect Goya, both artists who had to wait until the century for fuller recognition. As a collector, Sir William was open to the criticism that he amassed



Detail from The Duchess of Alba and Goya talking together.

The author is professor of philosophy at University College, London. Among his publications are *Image and Form*, a selection of Adrian Stokes' writings and *Art and its Objects*.

COMMONWEALTH

Universities throughout the Commonwealth face a difficult decade of austerity. They also face increasing demands to demonstrate their relevance to society. How will they be able to cope with those twin and paradoxical pressures?

BRUCE WILLIAMS discusses the common threads that are likely to run through the experience of all Commonwealth universities over the next ten years. David Caro from Tasmania and Dennis Irvine from Guyana examine the problems that higher education will have to overcome if it is to remain a vital force in society from the contrasting but convergent perspectives of a developed and a developing Commonwealth nation.

Income-elastic supply and demand

Bruce Williams on the difficulties faced by Commonwealth universities in a recession

In the 1950s and 1960s higher education was nourished by governments as never before or since. In Britain the Government appointed the Andersen committee on student grants, which in 1960 recommended that all full-time degree students should receive grants to cover fees and, in case of need, maintenance.

As in many other countries the attitude of governments changed during the 1970s. In Britain, where growth rates had been relatively low and unstable the change was obvious early in the 1970s. Mrs Thatcher's White Paper of 1972 affirmed the Government's commitment to the Robbins principle but warned that in view of competing claims on the revenue this would require a reduction in unit costs by perhaps 20 per cent in the next two quinquennia.

There are some exceptions. There are plans to increase the academic staff of the new University of Singapore based on a merging of the Uni-

versity of Singapore and Nanyang University from 700 in 1980 to 1,500 in 1985 for an increase in the number of students from 9,000 to 14,000. In Kenya there are plans for a second university and in Nigeria plans for 12 more universities and an increase in enrolments from 58,000 in 1979/80 to 130,000 in 1985.

The most obvious explanation of the change in the attitude of governments of both the Left and the Right in many countries in and beyond the Commonwealth is the economic recession. Significant recessions must influence the supply of resources and the demand for higher education.

Recessions reduce the buoyancy of Government revenue and increase the competing claims on that revenue, most notably for the support of the unemployed. A marked check to economic growth also reduces the demand for new graduates, and graduate unemployment (even when proportionately much less than among the less well educated) then disposes governments to revise plans for spending on higher education.

Also during recession employers become more critical (or at least more vocal in their criticisms) of the education system and this reinforces the disposition of governments to cut post-secondary education budgets.

The demand for higher education is also income-elastic. A slower rate of increase in family incomes, or an actual reduction, will check a rise in or reduce retention rates to final year of secondary school and participation rates in higher education.

It needs more than recession and demography to explain the fall in



tent of the changes in Government and community attitudes to higher education. In the 1950s and 1960s there were great expectations about the outcomes of much greater expenditures on higher education.

Greater "investment in people" was expected to increase economic growth, and a much wider access to education was expected to contribute to social equality. These great expectations were not realized.

The post-war boom was remarkable for its length and the extent of velped countries in output. In dependent on the creation and diffusion of new or improved processes and products and that required a much greater supply of graduates with a making good use of new technologies in primary, secondary and service activities.

Developing countries also needed a much greater supply of graduates to identify and diffuse relevant technologies, to adapt them to the local situation, and to create new structures, processes of public and social administration. But by no means all higher education is directed towards growth objectives, and for manpower policies to be effective, it is stimulating economic growth that will create a system of appropriate attitudes and ranges of skills, and complement it with very much larger sectors of technical and higher education for both pre-employment and on-the-job training.

Just how and how far an extension of higher education might reduce inequality has never been fully explored. The provision of scholarships and means-tested maintenance grants to detach the educational opportunities of children from the income of their parents is likely to increase social mobility but it is by no means obvious that it would reduce inequality of access to higher education to have a more certain effect on a sense of social equality.

There are probably many early leavers from families with low incomes and no tradition of higher education who could have done well in higher education had their parents been able and willing to provide appropriate encouragement. It is likely also that many early leavers could have become well-paid craftsmen or technicians had they stayed longer at school.

Attempts have been made to overcome the powerful influences of family and neighbourhood by providing uniform conditions in secondary schooling. These attempts have not been successful, and in some respects have had a perverse effect by failing to make provision for differences between individuals in their capacities for and interest in book learning and by reducing opportunities for students (and their parents) to be motivated by more direct forms of vocational training.

Had there been a greater diversity of curricula and approaches to teaching that fitted the great range of interests and academic abilities of young people, with well designed and administered provisions for training between institutions, there could have been a much greater proportion of children from poor families in the final years of secondary school and in higher education. Expectations that greater participation in higher education would reduce inequality were pitched too high, and progress was hindered by a confusion between egalitarian means

and outcomes in secondary education, but in most of the Commonwealth countries more could have been done in the higher education sectors to achieve some of the egalitarian effects that communities and their governments hoped for.

It is significant that the decline of prospective decline in the 18-21 age groups and in age participation rates has checked the academic drift in binary systems which had narrowed education opportunities, created a greater interest in special entry provisions, and extended provision for credit transfers.

Is Dr Irvine's gloomy prediction that in most Commonwealth countries universities, and presumably most institutions of higher education, will suffer from increasing financial stringency during the 1980s. If the main cause of the recession is the economic recession, Dr Irvine's prediction implies that the world recession will continue and perhaps deepen during the 1980s. He may be right. There have been depressions in the past which have not been short-lived.

In the current recession unemployment has not approached the level of the 1930s and for the most part has been a marked reduction in production. It is even possible that because of this recession, it will be longer than past depressions. But even the restoration of high growth rates and levels of employment would not of itself create a favourable environment of the 1950s and 1960s. To approach that would require action by those involved in higher education to restore public confidence.

Autonomy on the agenda for 1980s

Universities will be judged by the socio-economic benefits they provide, says Dennis Irvine.

It seems virtually certain that Commonwealth universities, almost without exception face increasing financial stringency during the 1980s if not beyond. Even if the present economic recession were to disappear, it is doubtful if there would ever be a return to the expansionism that characterized higher education in the 1950s and 1960s. In the short term the prospect could even be one of contraction, already the fate of many UK universities where cuts in staff establishments, and even in teaching programmes, are actively contemplated. If the situation is not quite as alarming in other developed countries, the signs are that their universities can expect to experience at least a period of no growth in the years ahead. Universities in developing countries are familiar with the problem of managing on limited budgets, but with continued external aid at home and a decline in external aid they are also likely to go away. It is therefore important for the effectiveness and public reputation of higher education institutions that they develop sustainable staffing policies. When they appeal to government to sustain staff despite the effect of recession on other sections of the community, or to provide funds to finance special redundancy schemes when demographic changes reduce enrolments, they run the risks of unpopularity with the electorate and of a spreading government control over their activities. How real is the latter risk can be seen from the sad change in the relations between the UGC and the British universities.

In emphasizing the need for universities to take action to improve performance and restore public confidence, I do not imply that the extent of reductions in public support are fully justified. In the countries which I know best, Britain and Australia, I have no doubt that reductions in Government support has gone too far. In Britain, for example, the number of home-based students is being forced down in large measure to reduce direct public expenditure on fees and maintenance grants. But at a time of high youth and young adult unemployment, most of those excluded from higher education will be unemployed or displace others from employment. The net saving to the Exchequer will therefore be very small. It is very foolish not to take that into account.

Some years ago Henry Rosovsky, dean of arts and science at Harvard, admitted to a growing sense of unease when the president of Harvard welcomed new graduates into the company of educated men and women. In addition to depth in

University of Guyana, with their very different and sometimes unique circumstances, to the situation of universities in developed countries. With that qualification we may nevertheless surmise, from the experiences of third world universities, that the issue of university autonomy will loom large on the higher education agenda of the 1980s. In times of financial stringency governments have sought to exercise control in varying degrees not only over how money allocated to universities is spent (financial accountability), but also over what it is spent on (academic accountability). In the 1980s one expects to see them pressing even further the claim of state authority over certain areas of university operations, the legitimacy of which will be hard to refute. The key issue, however, will not be so much what is how. Despite different approaches to the issue of state authority no university, or set of universities, seems to have found a satisfactory solution. The dilemma has always been how to engage government in dialogue and participation, a desirable goal, without incurring the erosion of certain rights of self-government, an undesirable end. Yet dialogue and participation are becoming increasingly crucial to understanding between government and university about the latter's role and purpose. It is no longer simply a matter of what government thinks the university ought to be doing, or what the university conceives as its proper role, so much as what both agree is desirable and possible. It is arguable that much of the present discontent with universities has derived from the false (not necessarily explicit) claims of universities on the one hand, and the equally false expectations of governments on the other. Perhaps the time has come for universities to be more open and precise about what they can and cannot do, even at the risk of losing some financial support, rather than continue to leave, by default, the impression that they are a panacea for all economic ills.

The immediate and overriding issue for universities in the North as well as in the South will undoubtedly be how to reduce costs, without seriously impairing academic standards. This is a challenge for universities to take a good look at themselves and their hallowed practices and traditions, since it is obvious that tinkering with the system will not be enough. The immunity of certain sacred cows can no longer be taken for granted, and assumptions underlying their sanctity will need to be re-examined. This is as true of staff-student ratios and teaching loads as it is of the standard academic year.

Within commonwealth universities generally the accepted norm of the average staff-student ratio is about 1:10; 1:12 is considered tolerable, and anything beyond that is anomalous. Norms of staff-student ratios have become somewhat like articles of faith, even though the premises on which they are constructed can scarcely claim the same weight of authority. The most basic premise concerns the standard to be reached to qualify for the award of a first degree. This standard is invariably fixed without reference to the needs of students (one of the causes of student unrest in the 1960s, or to the needs of society (the perennial complaint of governments). It is hardly surprising then that these norms show little variance between universities whether in developed or developing countries, despite their obvious inappropriateness to the social and economic circumstances of many of the latter. Perhaps George Tolley (see Education After School) is right in suggesting that we should ask ourselves and others more often what skills are being sought in the curriculum, both by those who construct it and those who are taught it. Such an approach would almost certainly result in a good number of what is currently taught is either, obsolete or irrelevant.

Even in any event large classes will be less of a barrier to achievement with the application that is now possible of new audiovisual and technological advances to the process of learning. On the subject of teaching loads academics are understandably very sensitive. Their modest teaching loads are defended, in the main, on grounds of time needed for research, and the importance of the latter to the quality of teaching. The arguments lose their force when it is discovered that research is often confused with scholarship, which is important to teaching. A good deal of the research carried out in universities is marginal and of mediocre quality, undertaken one suspects because of a reward system that places a higher premium on research, however poor, than on teaching, however good. Surely the time has come to bury the myth of the relationship between teaching and research, and to begin to organize the work of the university on the basis of a rational division of labour and skills. The outcome might not only be better teaching and better research, but less cost in the bargain.

The 30-week year is a legacy of the past. It may have had some justification when first introduced, but it is difficult to see what purpose it serves at the present time. That it should have become the accepted norm in poor third-world countries is an illustration of the unquestioning acceptance by ex-colonialists of traditions that serve class interests. It is only the academics who benefit from the arrangement. Yet the idea that academics should work for 30 weeks of the year while employees in other sectors put in between 44 and 48 weeks will be hard to defend in the difficult financial climate of the 1980s.

At the least universities will have to consider moving over to a 40-week year. While it is hard to say whether the change will reduce costs, it will certainly be cost-effective (greater use of physical plant, shortening of years spent on a degree) and will mean greater flexibility. Coupled with the use of part-time staff, the 40-week year offers interesting possibilities to enhance the university's effectiveness, and widening the scope of its activities.

Use of part-time staff is rarely considered by universities except in times of necessity. That is how the practice originated at the University of Guyana. However, it was soon clear that the community had a reservoir of human resources that could be used to advantage, and that apart from its cutting costs, part-time staff brought the practical realities of the outside world into the classroom. Naturally, there are limits to the use of part-time staff if "standards" are to be maintained; but a judicious balance between the two, with careful organization and monitoring, could easily be adopted as a staffing policy without adverse consequences.

between fields of study, the extent, quality and direction of research, the balance between R and D, the supplies of risk capital for new ventures, the pressures to innovate and to diffuse innovations, and the offsetting impediments to innovation and diffusion, are all important factors for economic growth.

In part generated by low rates of economic growth, science parks are now fashionable. In Britain, Trinity College established the Cambridge Science Park in 1973, for applied R and D and non-routine small scale production in high technology. Heriot-Watt University has a research park for industrialists and research institutes to establish R and D and work in close cooperation with university staff.

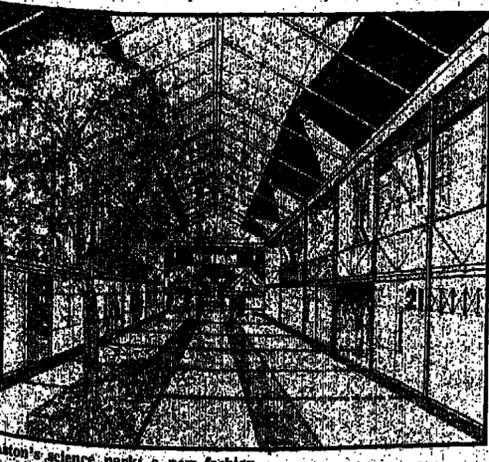
Salford has a nearby science park, Aston in cooperation with the City of Birmingham and Warwick in cooperation with the West Midlands County Council, are establishing them. The universities of Brunel and Surrey and the University College of Swansea have plans, and the universities of Glasgow and Strathclyde are cooperating with the Scottish Development Agency and Glasgow District Council to establish a West of Scotland Science Park.

In Canada, the governments of Alberta, British Columbia and Saskatchewan have invested heavily in industrial research parks on or near many of their university campuses. In Singapore a Science and Technology Park is being built on land next to the Kent Ridge campus of the university to stimulate research and innovation in manufacturing and software enterprises, to foster interaction between industrial and university researchers, and to create a "critical mass" to launch the R and D programmes. Manufacturers conducting R and D and R and D institutions serving them are to be given substantial tax incentives.

Apart from formal science parks, for years many universities have conducted research into pressing practical problems and been involved in applying the results, most notably in teaching hospitals. The potential for applying the results of research in electronics, biotechnology and medicine has brought many university departments closer to industry, though the extent to which joint enterprises may develop is not yet clear.

To the extent that science parks succeed, the public reputation of universities may rise, at least in the fields of science and engineering, and their incomes will increase directly from science park activities and indirectly from the growth in GNP.

But there is a great deal of activity in higher education that cannot be linked at all directly with economic growth; and in the developed countries specifically vocational education and training, and that should concentrate attention on the qualities of non-vocational graduates.



Aston's science parks: a new fashion

Vertical text on the left margin: 1982 6 18 156

The Commonwealth currently make provision for one-year certificate and two-year diploma programmes alongside traditional degree programmes. At the University of Guyana we have gone further in the case of engineering and agriculture. In these disciplines students do two years (from O level) for the award of a diploma, followed by two years for the degree. Students are free to leave at the diploma stage, and continuation towards the degree depends on an acceptable standard reached at the diploma. Attempts to extend this structure to other faculties have so far met with resistance, but the idea is by no means dead.

### Institutions in trouble owing to lack of student interest

There have been great changes in higher education in Australia since the war. In 1945, there were about 16,000 students in six universities but, by 1975, there were nineteen universities and nearly 150,000 students. Dramatic as these figures are, they underestimate the growth which took place during the 1960s and early 1970s as a network of colleges of advanced education was also established and by 1980 the college enrolment was nearly equal to that of the universities.

Since 1975, the demand for higher education has abated and now, as in many parts of the world, student enrolments are remaining almost constant. There are some curious aspects of this phenomenon. In 1974, about 17.9 per cent of those aged 17 enrolled in universities or colleges. By 1981, the figure had dropped to 14.5 per cent. This decline in interest has taken place despite continuing high unemployment, particularly among those who have just left school.

Similar trends are discernible in the last two school years, with the added complication that boys are tending to leave school earlier than before while girls are staying on longer. In consequence, for the first time more girls than boys are entering the colleges and universities.

Decreasing financial assistance for students may be an important factor behind the changed participation rate. Government tertiary education allowances have not kept pace with inflation and, in anticipation of a loan scheme which is not yet available, they have not risen at all in 1982. Tertiary allowances are subject to a family means test and the level above which grants are unavailable has fallen in real terms. Unemployment benefits are financially more rewarding than tertiary education allowances.

The real causes of the changed participation rates are not known and research is urgently needed. Whatever the reasons may be, the effect is profound. Not only are numbers no longer rising but student categories are also changing. There are now more students over 25 years of age, more part-time students and more women than ever before. Many older students study the humanities while the number studying some of the sciences and technologies is believed to be too low for immediate manpower needs. A drop in the demand for teachers has drained the populations of education schools.

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Until this year supplementary grants provided retrospective compensation

structure? Is it not possible, with the help and cooperation of the universities, for these two years to become the foundation in general education of a new degree structure? Properly designed, the courses of study in these two years could either lead to a qualification or be the basis for further study. The curious position of the present A level qualification is highlighted in the case of universities like Guyana where O levels are the minimum for requirement admission. A peculiar situation thus exists where students entering the university from O levels complete a degree in four years, as against five years for those who follow the A level route. This type of incoherence in the system is wasteful and has to be addressed. Universities will have to begin to see themselves as part of, and not apart from, the total education system, and perhaps the current financial squeeze is the kind of catalyst that was needed.

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Commonwealth universities also lack for interuniversity cooperation. At a time of growing internationalisation between countries, and an increasing need for action by universities in the search for solutions to some of the most pressing global problems, there is a danger that universities may become even more preoccupied with their internal problems. This would be a tragedy. The issue of interuniversity cooperation emphasizes how important it is for universities to look beyond marginal adjustments in response to the financial crisis. What is needed now are radical changes of a qualitative nature, within whose framework interuniversity cooperation would be one of the very important objectives to be accommodated.

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# BOOKS

## The nature of scientific change

by Peter Abell

T. S. Kuhn and Social Science by Barry Barnes  
Macmillan, £12.00 and £3.95  
ISBN 0 333 28936 6 and 28937 4

Consider the following: ... so that from a sociological perspective there is no value in a fundamental distinction between "science" and "ideology". (page 107)

There is no appropriate scale available with which to weigh the merits of alternative paradigms: they are incommensurable. (page 65)

It is never possible ... to produce any context independent rational justification for preferring the new to the old, any indefeasible proof of "advance" or "progress". (page 11)

Thomas Kuhn's by now famous - book *The Structure of Scientific Revolutions* was first published in 1962 and introduced a series of new catchwords and phrases - paradigm, normal science and revolutionary science - into the already taxing vocabulary of the philosophy and the sociology of science. Although Kuhn is neither a philosopher nor a sociologist things of these two disciplines have never been the same since. He shattered a complacency, a world in which the scientist and philosopher could all upon each other in the dizzy realization that western science was the supreme realization of man's rational encounter with an otherwise chaotic universe.

For Kuhn the historical development of science, as a matter of fact, can be sliced up into, for the one hand, periods when a particular paradigm is intellectually pre-eminent - periods of so called "normal science" - and, on the other hand, intervening periods when the old paradigm is replaced by the new state - periods which he calls scientific revolutions. Scientific development is, thus, not as the prevailing Popperian orthodoxy would have it, a seamless web of conjecture and attempted refutation, rather it comprises periods of relative calm interspersed by periods of revolutionary turmoil.

Furthermore, both are functional necessities for the development of science. The great pieces in the drama of paradigm shifts are never neatly defined. But if we interpret paradigms as a set of assumptions pertaining to the way in which we can gain knowledge of the world we don't go far wrong. A paradigm is usually wider than a theory and comprises a universal cosmology.

Normal science is a period in which a paradigm is an established resource upon which practising scientists can draw; a consensus is arrived at about the particular way of understanding the world is the appropriate and scientific endeavour is directed towards consolidating and extending its domain. Anomalies pile up in the net; they are not for the time being assumed to be part of the paradigm but these are at least temporarily put aside - the paradigm must be held on. And so must it be, for if anomalies were to be reduced into a paradigm, the healthy growth of science would be cut short in its infancy. Eventually, a paradigm becomes necessary - the sheer weight of unsolved problems - drag the old paradigm down and we enter the period of revolutionary science when for the time being anything goes. Speculation is placed alongside the old paradigm, a new paradigm emerges in the victor and things return to a new normality. But the collective de-

cision to change paradigmatic allegiance is never compelled solely by matters of logic and experiment (truth!) and as a result paradigms are "formally incommensurable". Thus the opening quotations (from Barnes) of this review and Kuhn's notoriety as a relativist. To paraphrase an unfortunate contemporary idiom - truth is the first casualty of paradigms.

In one way or another both philosophers and sociologists, prior to Kuhn's own revolution, conspired to paint an entirely flattering picture of natural science (and, thus, the natural scientist); they detected a distinction, objective mode of cognition through the timeless and resolute application of "the scientific method" which amounted to nothing more than a potent concoction, in differing relative proportions, of reason (logic) and experience. A concoction which hands distilled either objective truth or an incessant asymptotic approach to it. In our cultural wilderness redolent with distortions, half-truths, special pleading and unscrupulous huckstering, the sciences stood culturally apart, something for us all to emulate in our more mundane and everyday practices. Science was of this world, but at the same time otherworldly, it belonged to the universal aspirations of man and as such was timeless and ahistorical. Many of those who chose the calling fell by the wayside, others attempted to cultivate infertile land, but it was always clear who the malefactors were and why so: ideologists were ideologists, scientists scientists, and even if, inadvertently, ideological intrusions were temporarily made into the citadel of science, they were relatively easily detected and cast aside without any long-term detriment to its rational purity.

Barnes parodies this view vividly in his description of a "Manichaean cosmos": "truth, validity, rationality, objectivity are to be seen among the white apparelled children of the light; error, irrationality, custom, convention and dogma, and many others dressed in black". Barnes, following Kuhn, would have us accept a readjustment in the apparel of the *dramatis personae*; the history of science is as it actually transpired, rather than the way that most philosophers would have it that it should have transpired, demonstrates that "knowledge is conventional through and through". Furthermore, as a consequence any conception of a historical drama in which our writer than white smocked heroes search for ultimate truth in the partially revealed script of nature is a travesty only now Barnes that we can be persuaded to take seriously what at first sight seem to be most outrageous ideas.

It is, however, important not to misinterpret these claims. Barnes (and Kuhn?) are not through-going perceptual relativists. For as Barnes puts it, such authoritatively backed conventions are a "socially sustained ordering of the environment, not a socially sustained distortion of it". It may be wrong, therefore, to place Kuhn's original text has been subjected to the most critical assessment. It is not to deny that one picks up a philosophical text that one literally cannot put it down. I found Barnes's arguments (like Kuhn's before him) by my constant infatuation, persistently persuasive but also, to my way of thinking, not only fundamentally wrong-headed, but intellectually, socially and culturally dangerous. Yet, I have to admit that my reactions are peppered with emotion; I have to concede that I want to know what Barnes means to say. I want to preserve truth, I want to distinguish between science and non-science in terms of the "Manichaean cosmos" and I find it impossible to think in terms of scientific progress. Kuhn disturbed my complacency when I read him ten or so years ago, Barnes has done it again.

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pretend that we can draw an other than conventional boundary between science and non-science is a forlorn hope. So much for Popper and his entourage.

We might ponder why Kuhn's book has become so influential, particularly in contemporary sociology and psychology. The eagerness with which some social scientists have embraced Kuhn undoubtedly reflects the intellectual chaos of their own disciplines; the proposal that the social sciences have the status of being intrinsically multi-paradigmatic rather than merely an intellectual jungle gives succour - but the enthusiasm with which the post-Merton and Barber generation of sociologists of science have endorsed the proposition that the physical sciences are just one of the pedlars of conventional nostrums is most disturbing.

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It is clear that both Kuhn and Barnes are asking an awful lot of their concept of paradigm and its intellectual underpinning, "convention". In some ways the trained concepts enable them, with effortless grace, to dismiss the common man's notion (also) that, for instance, the Copernican picture of the solar system is at one and the same time, both "more true" and an "advance" upon the Ptolemaic picture, or that Dalton's atomic theory stands in a similar relationship to theories of affinity. Such claims are for our two intrepid authors literally meaningless; for them each paradigm is its own criterion of truth (and meaning). It is surely to the credit of both Kuhn and now Barnes that we can be persuaded to take seriously what at first sight seem to be most outrageous ideas.

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# BOOKS

## Fitting an intellectual jigsaw

Lull and Bruno: collected essays, volume one by Frances A. Yates. Routledge & Kegan Paul, £12.50 ISBN 0 7100 0952 6

Dame Frances Yates, who died last year at the age of 81, had come to be considered one of the most original and stimulating intellectual historians at work in this country. She acquired this reputation relatively late in life, with the publication of her books on *Giordano Bruno and the Hermetic Tradition* (1964), and *The Art of Memory* (1966), together with the exciting but rather more speculative books which followed them.

However, many of her best ideas had been put forward long before, in the *Journal of the Warburg and Courtauld Institutes* and elsewhere, in the 1940s, and even the later 1930s. Nine of these articles, dealing with what Dame Frances called "the imperial theme in the sixteenth century", in other words with the political ideas expressed in court festivals, tournaments and religious processions, were published in book form in 1975. They offer a fair sample of one of the two main aspects of her work, the interpretation of public rituals. What was left out of that collection was her occult side, her interest in secret intellectual traditions, whether hermetic, alchemical, cabalistic, or rosicrucian. The new *Lull and Bruno* collection begins to fill this gap.

The volume contains six essays, published over a period of more than forty years, between 1938 and 1981. Frances Yates knew how to live with texts and brood over intellectual problems, looking at them from one point of view after another until new solutions came to her, almost unconsciously. This was, no doubt, one of the secrets of her success.

Two of these six essays, the most complex, technical and difficult in the volume, deal with the "art" of Ramon Lull, or Lull, the thirteenth-century Catalan philosopher and mystic. The general reader might be well advised not to venture on them without having first absorbed the short introductory chapter on Lull from Frances Yates's *Occult Philosophy in the Elizabethan Age*, published in 1979. She describes Lull's "art" (in other words his "method" or "system", which uses letters of the alphabet based on geometrical figures to work out various problems), as "a kind of logic", while noting that Lull himself thought the art a means for both discovering and demonstrating truth in all areas of knowledge. Her later studies emphasize the relation of Lull's ideas to the mystic, the secret Jewish tradition handed down and elaborated in medieval Spain. Here, on the other hand, she emphasizes the influence on Lull of the ideas of a medieval Platonicist, Johannes Scotus Erigena.

The four studies of Bruno, on the other hand, do not require the reader to be acquainted with Frances Yates's *Giordano Bruno and the Hermetic Tradition*. They do not so much repeat (or contradict) the later book as complement it. The charming piece on Bruno's conflict with some dons at Oxford, Aristotelian doctors of theology, is built round the argument that it is incorrect to interpret this episode as a clash between Renaissance innovation and medieval tradition, established at Oxford. On the contrary, Bruno's dialogue *The Ash Wednesday Supper* - it seems impossible to reproduce in English the pun in his original title,

*La Cena de le ceneri* - is, as Dame Frances put it, "an attack, not so much on medieval philosophy as on a certain form of Renaissance pedantry". It has since been discovered, incidentally, that when Bruno did lecture at Oxford, one of the dons, having the impression that he had heard it all before, found a book which claimed at the time, that Bruno had taken his lectures "almost verbatim" from the works of the neoplatonist philosopher Marsilio Ficino.

"The Religious Policy of Giordano Bruno", another essay of the late 1930s, returns to *The Ash Wednesday Supper* to suggest that it can be read as a religious allegory, with the supper standing for the Lord's Supper and the Aristotelian pedants symbolizing all those who are spiritually blind. Those with eyes to see, according to Bruno (according to Yates) would realize that the disputes of the day between Catholics and Protestants were futile. Dame Frances studied literature before turning to intellectual history, and this essay shows how she was able to turn to advantage her sensitivity to the possible layers of meaning of a literary text.

Still closer to literary history is an essay first published in 1943 on another dialogue of Bruno's, the *Erico Furor*. (Once again the title defies the translator: Heroic Madness?) Enthusiasm? Ecstasies? Frances Yates compared this dialogue, in verse and prose, with Elizabethan sonnet sequences, and although it has no illustrations, she made the brilliant suggestion that it belonged to the tradition of Renaissance emblem-books. After these three relatively early pieces, it is something of a surprise to turn to one of the last essays Dame Frances wrote, a comparison between Bruno and the Elizabethan magus John Dee. This last essay is much bolder. It shows more awareness of general European trends. It does not stick so closely to texts, although the basic point is a textual one, emphasizing the influence on both men of a book by the German magus Agrippa von Nettesheim - a Faustian figure - on *The Occult Philosophy*. By the time she wrote this essay, her patience had borne fruit and the pieces of the intellectual jigsaw of the Renaissance were fitting together for her. However, the early essays retain their value and it is good to have them made more accessible. A pity, though, that she did not see fit to discuss the intellectual development of the author and in particular her various changes of mind concerning that still elusive figure, Giordano Bruno.

analysis was among the first to argue the need for a statement of rights, they did so only in order to delay or obstruct the offer of the crown to William, and took no constructive part in shaping the Declaration. For the Tories - and for many Whigs - settling the succession was far more important than asserting rights, so items in the Declaration reflecting only minority or individual interests. She shows, too, how many features of the original draft were modified or removed in order to meet objections from the Tories, especially in the Lords.

Nevertheless, the value of her analysis is substantially reduced by her insistence on seeing the Declaration as the work of "radical" Whigs, and their forebears had been striving since the 1640s. To support this contention she quotes extensively from contemporary pamphlets to show the ideas that were "in the air" at the time and the way in which the Declaration was understood by some contemporaries.

The difficulty with this argument is that so much that was explicitly Whig or novel in the early drafts was not in the final version, for example the statements that James had broken "the original contract between king and people" and "violated the fundamental laws" (phrases earlier accepted by both Houses). As so little that remained was explicitly "radical", she is reduced to seeking radical implications and to claiming that contemporaries would have understood these implications, even though many clearly did not and there was little in the express wording of the document to make them do so.

Moreover, she tends to treat as "radical" anything which tended to limit the crown's powers or assert individual rights, even though a belief in limited monarchy and the legal rights of the subject lay at the heart of seventeenth-century English constitutional thought.

Three further problems spring to mind. First, Professor Schooner claims that more than half of the "rights" claimed in the Declaration were not "ancient", This seems to me over-precise. Most referred to exploited uncertainties or stretched or abused powers which were, in themselves, unexceptionable - conduct within the letter of the law, but contrary to its spirit. Others referred to isolated cases in very general terms and some were very vaguely worded - parliamentary elections "ought to be free". Only one curtailed a major and well-established royal prerogative - control of the armed forces.

Second, her argument that the Declaration was part of a long-term Whig campaign for "radical, libertarian" reform would have been more convincing had there been any sustained attempt to remedy those "grievances" which required new legislation. She does not discuss this question, but in fact most of this proposed legislation never reached the statute book: the French wars and experience of William soon gave rise to new issues.

Finally, she fails to distinguish between theory and practice, between claim and power. The Declaration contained no mechanism for its own enforcement. If William and his successors kept mainly within the limits it laid down, this was because (unlike their predecessors) they were financially dependent on Parliament. The Commons could now force the king to supply and it was this, not the Declaration's inherent excellence or "radical" implications which forced later kings to observe its terms. (Professor Schooner says only: "While the impact of war and finance was of Rights deserves credit too.")

A failure to appreciate such facts greatly weakens the arguments of this scholarly book: it is flawed by too much emphasis on legal and theoretical niceties and a neglect of the hard realities of practical politics.

## Dividing Russia

The Origins of Autocracy from the Terrible in Russian History by Alexander Yassar. University of California Press, ISBN 0 520 04282 4

This is not, in any normal sense, a book on Ivan the Terrible. The reader will look in vain for any systematic discussion of events of his reign, a knowledge which the author assumes of his readers. It is rather a meditation, a polemic on the profound and unattained differences, in political and intellectual life, between the east and western Europe, and of reasons for these differences.

Whereas the western side of the end of the Middle Ages was Dr Yanov argues, developed by royal absolutism, which was at least latent in what the mid-sixteenth century saw from a more desolate focus of this. This allowed at times rapid change in institutions, as Peter I, but this change was superimposed upon a political which remained fatally stunted. Spasms of violent change, under Ivan IV, under Peter I, or Paul, Nikolai Alexander III or Stalin, were followed by phases of stagnation, which led on to the new epochs of intellectual life.

The Oprichnina of 1565-7, an extraordinary division of Russia, is still so hotly debated by Russians, set in motion this day. It was the "nucleus of the cracy" in Russia and thus determined the entire future of the Moreover Ivan IV, by beginning disastrous Russian from Europe and her off from the liberalizing onces of the West. Under until his death in 1585, making. Some moves towards realization of governmental had been visible and until the Russian peasant had enjoyed "golden age". In a few years, it is claimed, his grandson creating a murderous and cruel sano form of autocracy, by ending on a disastrous war and by bringing the degradation of the country through ending its freedom of movement, set Russia on a downward course from which it never recovered.

The book forms part of a larger work, a *History of Opposition in Russia*, written by the author emigrated from the Union and never published. It shows very clearly in the of personal involvement, even throughout the book. This is a very briefy would, have added weight to the argument.

Other questions arise, discussed in the mind of the reader, concerning events of a few years from the 1550s onwards, as to whether here, really determine, the course of an enormous and rapidly changing empire for the next four centuries? Has not Ivan III, on policies and personality like those of his historical research has been over-estimated at the expense of his much more interestingly grandson? How far was the autocracy of Stalin really the essential as those of Peter I? Nevertheless, this book asks real questions and stimulates thought. It is a strong disagreement. The translation, by Stephen Dunbar, is very well.

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## BOOKS

### The open poem

Yeats, Eliot, Pound and the Politics of Poetry: richest to the richest by Cairns Craig. Croom Helm, £11.95 ISBN 0 85664 997 X

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Yeats, Eliot, Pound and the Politics of Poetry is an ambitious attempt to answer a difficult but very important question: what is the relationship between authority, the politics and early modern literature? In particular, what is the ideology of fascism to the poetic theory and practice of these three writers?

In one sense Dr Craig adopts an admirably complex approach to this issue. He analyses the aesthetic theories of the three poets, attempting to discover what is "elitist" or "authoritarian" in their conceptions of the nature of art and the effect it has upon its audience. He alludes widely to their writings on culture, society, and politics; and he offers those and perceptive readings of many of Yeats's most important poems, selected works of Eliot from *Poetry* and *The Waste Land*, and several of Pound's early lyrics.

But in another sense Dr Craig offers a very narrow argument, completely to ignore the historical importance of associationist theories of poetry, as he approaches this poetry from a perspective, and answers the question about poetry and politics only in those terms. He traces the theory of associationist aesthetics to Locke and Archibald Alison to Wordsworth and Hallam, and argues that the theories of Yeats, Eliot, and Pound. He then approaches the central question in terms of a movement in the early part of the twentieth century from a conception of poetry as "open" to individual interpretation and associations to one in the late 1920s which demands the "closure" of social traditions in order to ensure a more homogeneous but "closed" response to poetry. "The open poem," Dr Craig asserts, "demanded a counterbalance the closed society."

This is certainly an interesting and somewhat thesis. Yeats's early poetry, such as "The Symbolism of Poetry" and "What is Popular Poetry?" usually thought of as being "romantic" or "symbolist" in orientation, now reveal another side: a preoccupation with associations and cultural memory. Eliot's "Tradition and the Individual Talent" is interpreted in terms of the theory of associationist theories, in particular his assertion that every individual mind can create new fusions from his field of associations, thereby giving new shape to the past. This is contrasted with the much more "authoritarian" and "elitist" ideology in Yeats's poetry of the late 1920s and Eliot's interest in Charles Maurras's proto-fascist *Action Française*, evident in the *Criterion* essays of 1928.

In addition, Dr Craig re-reads some similar poems in their own time, as he does in "In Memory of Major Robert Gregory", as a tactical critique of that romantic idealist and a celebration of Yeats's own patently "conservative" and "Nineteenth-century and Nineteenth-century" becomes an exploration of the violence and destruction "necessary" for the aesthetic creation of what has been described as "a dynamic but a part political": a study in the authoritarian relationship between one and the many. Less convincing perhaps, *The Waste Land*, the "open" poem, is also an act of defiance of tradition, from which all subsequent editors derive, the First Quarto (1603) is a bad text reconstructed from memory by one or more of its actors, while the Second Quarto (1604), de-

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## BOOKS

### Stings and arrows

Hamlet edited by Harold Jenkins. Methuen, £12.50 and £3.95 ISBN 0 416 17910 X and 17920 7

The title of Dover Wilson's celebrated book, *What Happens in Hamlet* (1935), might be better graced with a question-mark. For, as many have thought and Harold Jenkins has written, *Hamlet* is the most problematic play ever written by Shakespeare or any other playwright. Professor Jenkins's monumental edition of the play for the Arden Shakespeare impressively confirms such a view in the very scale of its undertaking. The first quarter of this volume of nearly six hundred pages is devoted to a most authoritative introduction and the last quarter is taken up by longer notes dealing with points too knotty for the briefer footnotes.

Shakespeare himself is not solely responsible for the problems of *Hamlet*: from the actors, scribes and printers of his own time, to the two centuries which corrupted the text of his "poor Gregory", as a tactical critique of that romantic idealist and a celebration of Yeats's own patently "conservative" and "Nineteenth-century and Nineteenth-century" becomes an exploration of the violence and destruction "necessary" for the aesthetic creation of what has been described as "a dynamic but a part political": a study in the authoritarian relationship between one and the many. Less convincing perhaps, *The Waste Land*, the "open" poem, is also an act of defiance of tradition, from which all subsequent editors derive, the First Quarto (1603) is a bad text reconstructed from memory by one or more of its actors, while the Second Quarto (1604), de-

frankly, but not even Professor Jenkins's magisterial dismissiveness will disguise some awkward issues. For instance, he gives short shrift to attempts at locating in the Gonzago play Hamlet's "speech of some dozen or sixteen lines" but he does not try to explain why Shakespeare clearly alerts the expectations of the audience only apparently to thwart them. In an edition of this importance, providing so much that is helpful and illuminating, it is reassuring to find one or two points provoking disagreement.

Frank Stack is lecturer in English at the University of Southampton.

Stings and arrows

Hamlet edited by Harold Jenkins. Methuen, £12.50 and £3.95 ISBN 0 416 17910 X and 17920 7

The title of Dover Wilson's celebrated book, *What Happens in Hamlet* (1935), might be better graced with a question-mark. For, as many have thought and Harold Jenkins has written, *Hamlet* is the most problematic play ever written by Shakespeare or any other playwright. Professor Jenkins's monumental edition of the play for the Arden Shakespeare impressively confirms such a view in the very scale of its undertaking. The first quarter of this volume of nearly six hundred pages is devoted to a most authoritative introduction and the last quarter is taken up by longer notes dealing with points too knotty for the briefer footnotes.

## BOOKS

### Influence by stealth

Edward Garnett: a life in literature by George Jefferson. Jonathan Cape, £12.50 ISBN 0 224 01488 9

Conrad's *Nigger of the Narcissus*, Galsworthy's *Man of Property*, D. H. Lawrence's *Sons and Lovers* and T. E. Lawrence's *The Mint* all have one (and only one) thing in common: a dedication to Edward Garnett. J. C. Powys, excited by an favourable response to his first novel *Wolf Solent*, described Garnett in 1929 as "the most authoritative of all English critics".

The material assembled by George Jefferson in this absorbing book goes far to explain his authority and the regard in which he was held by contemporaries. At a time when Wilde (and later, in a different way, T. S. Eliot) championed the ideal of the "critic as artist", Edward Garnett emerged as the epitome of a very different species: the critic as publisher's reader.

The job of a publisher's reader is not to preach doctrines or to stage-manage public applause but to influence literary taste by stealth. His *Gyrfalcs* are characteristically born between his author's initials and interpretative sympathy - and the dictates of his employer's balance-sheet. The great art of the reader's report is to argue, first, that literary promise, however uncommensal, is a sound investment and, second, that going after immediate returns is morally disreputable and best left to more fly-by-night competitors. Garnett, who mined both as novelist and playwright, was a past-master of the form.

He entered T. Fisher Unwin's office in 1887 as a "parcel-wraper" and went on under various publishers until he found a secure berth with Jonathan Cape. Cape's obituary of him describes him as "keeper of the firm's literary conscience". It seems a strange career for one who pronounced as his gravest literary maxim: "Never give the public what it wants." Not surprisingly, relations with his employers were often

iffable, but not even Professor Jenkins's magisterial dismissiveness will disguise some awkward issues. For instance, he gives short shrift to attempts at locating in the Gonzago play Hamlet's "speech of some dozen or sixteen lines" but he does not try to explain why Shakespeare clearly alerts the expectations of the audience only apparently to thwart them. In an edition of this importance, providing so much that is helpful and illuminating, it is reassuring to find one or two points provoking disagreement.

D. J. Palmer is professor of English at the University of Manchester.

Influence by stealth

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Frank Stack is lecturer in English at the University of Southampton.

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**Edward Arnold**  
41 Bedford Square, London WC1B 3DQ

**Ancient rights**  
Peter Burke  
Peter Burke is a fellow of Emmanuel College, Cambridge.

**The Declaration of Rights, 1689**  
by Lols G. Schooner  
Johns Hopkins University Press, ISBN 0 8018 2430 3  
On February 19, 1689, before William and Mary were formally offered the English crown, they were read the Declaration of Rights. This document contained several elements. It recorded the abdication of James II, regulated the order of succession after William and Mary and set out a new oath of allegiance. Above all it asserted certain ancient rights and liberties allegedly "inherited" by Charles II and James II. This part of the document, however, was a much watered-down version of some heads of grievances earlier drawn up by a Commons committee. The original list being reduced by the omission of those "heads" which would require fresh legislation. Historians have long argued about the Declaration's constitutional significance, but Professor Schooner's study, in the range of sources used. She says, for example, although Tory MPs

**John Miller**  
John Miller is lecturer in history at Queen Mary College, London.

**M. S. Anderson**  
M. S. Anderson is professor of national history at the London School of Economics.

**Frank Stack**  
Frank Stack is lecturer in English at the University of Southampton.

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# BOOKS

## Cynical cynoclept

Jaroslav Hasek: a study of "Svejk" and the short stories by Cecil Parrott Cambridge University Press, £18.50 ISBN 0 521 24352 1

Camp-followers of the Good Soldier Svejk and admirers of his remarkable creator, Jaroslav Hasek, must once again acknowledge their debt to Sir Cecil Parrott. In 1973 he gave us the first complete English translation of "Osudy Dobrého Vojáka Svejka za světové války" (The Fortunes of the Good Soldier Svejk in the World War), and five years later a biography of its author, *The Bad Bohemian*.

Last year he gave us the first English translation of the Bugtina stories under the title *The Red Commissar*. To complement them we now have a study of Hasek's writings, placed in the context of his social and political background, and of his wayward personality. The last three chapters provide an analysis of the structure and form of the "Good Soldier" and a discussion of the controversy which raged after the author's death among Czech, German and Russian critics and politicians about the significance of Hasek's work.

After Hasek's untimely death in 1923, at the age of 39, with only three and a half volumes of the projected six volumes of Svejk completed his fellow Czechs, with few exceptions, ignored a work which they feared would present to the world a picture of their proud and newly independent nation as a bunch of disreputable, half-witted dodgers and skivers. The commonly held view of the Prague literary establishment was expressed by the literary historian Arne Novák, who described Hasek as "an altogether unlitary writer who attained world fame through his pan-European defeatism and meachastous triviality, when he created that irresistible war-type, the Good Soldier Svejk, a cowardly and tasteless buffoon, who behaves like an idiot and who with the triumphant smile of cynical superiority preserves his stinking hide from the Imperial and Royal Army".

Ironically it was the German-speaking critics, with whom Hasek had little in common, who first took up the cudgels on his behalf and who forced his fellow Czechs to take notice. One early champion was Max Brod, who wrote an encouraging review of the first volume, when it appeared in 1921. Hasek commented "Now I really start to believe that Svejk will have a great career. Trust me, my friends, anything a Jew touches succeeds." In the same year, the Communist, Olibrecht, the first Czech Socialist Realist, described Hasek as an "idiot of genius" to which Hasek replied "I'm not an idiot of genius. I'm just an ordinary idiot."

One of the reasons why the Czech literary world undervalued Hasek was because he wrote in the salty vernacular of the ordinary soldier, and the writers of the new republic were anxious to present a picture of a cultivated people who had a mature literary tradition. Nationalism often manifests itself in a drive to

purify the national language. The Czech soldiers who served in a multinational army, 75 per cent of whose officers were German-speaking, were bound to have absorbed many alien forms of speech into their native Czech. As the author of the first major novel to come out of the First World War, Hasek incurred the penalty of his originality. A decade later, when Remarque and others had followed his example in using the real language of the soldier to describe the horrors, absurdities and follies of military life, few eyebrows were raised among critics and readers.

The Czech middle classes, of whom many spoke German, and like their President, T. G. Masaryk, shared in the cosmopolitan culture of the Austro-Hungarian Empire, were the greatest beneficiaries of the new republic. In fact, they had not done too badly under the old Emperor. Many of them did not espouse the cause of Czech independence until Austria-Hungary was tottering to its grave. Even Masaryk supported the maintenance of the monarchy until well into the twentieth century. It was the Czech workers, the PBI of the Imperial Army, who saw the unattractive underbelly of the Empire. Hasek turned over a few stones and discovered some repellent stonings squirting beneath them. He turned on the dark side of Austrian-dominated Cisleithia - which included Bohemia and Moravia - revealing light of the ridiculous.

In most cases the officers are portrayed as German-speaking while the soldiers speak Czech. The usual attitude is one of bullying, contemptuous and obscene abuse, often accompanied by physical assault. The homosexual colonel may have called Svejk "a nice lad", but his fellow officers - with the exception of Svejk's master, Lieutenant Lukás - were more likely to address him as "scoundrel", "blood-sucker" or "stinking bastard". However, the *Good Soldier Svejk* is much more than an anti-Habsburg satire. It is a newly independent nation as a bunch of disreputable, half-witted dodgers and skivers. The commonly held view of the Prague literary establishment was expressed by the literary historian Arne Novák, who described Hasek as "an altogether unlitary writer who attained world fame through his pan-European defeatism and meachastous triviality, when he created that irresistible war-type, the Good Soldier Svejk, a cowardly and tasteless buffoon, who behaves like an idiot and who with the triumphant smile of cynical superiority preserves his stinking hide from the Imperial and Royal Army".

In a sense Hasek did not create his characters, but took them from life. In fact, Cecil Parrott has attempted to identify some of the originals. His model for Svejk is thought to have been Frantisek Stráslipka, batman to Hasek's company commander - and we are even shown a photograph of him. It seems obvious, however, that there was a great deal of Hasek himself in the character and exploits of Svejk. Lieutenant Lukás, the most admirable of the officers who appear in the book, has been traced to Oberleutnant Rudolf Lukás, of whom Parrott writes that he was "honest and fearless, a man to whom any kind of bootlicking or flattery was totally alien, qualities which stood in the way of his promotion." This Lukás must also have been something of a saint, for when asked after the war what he thought about Hasek, "when he read about the totally fictitious love affairs which

## A sense of theatre

Popular Appeal in English Drama 1850 by Peter Davison. Macmillan, £17.50 ISBN 0 333 28084 9

Peter Davison is a collector. His repertoire of low comedy acts from the last 150 years of British theatre, is well-known and, by those who have witnessed his own performances, well appreciated. In a previous book, *Contemporary Drama and the Popular Dramatic Tradition in England*, he examined the impact of these hall acts on modern drama. This new book's main point was to show through a mass of examples how the traditions of burlesque and music hall served as a liberating influence after the com-



Portrait sketch of Hasek by Josef Lada, illustrator of *The Good Soldier Svejk*

batman to whom he had been kind had wished on him", he replied that Hasek "was a really good soldier. He did not drink (sic), and by his humour he kept his comrades in a good mood. He was not coward. A most strange person but suddenly he would play some idiotic trick."

The cruellest and least convincing portraits are those of men in holy orders. Chaplain Otto Katz, whom Svejk serves as batman until his master loses him at cards to Lieutenant Lukás, is a drunkard, a cheat, a liar, Parrott remarks "in fact, there is no side, but that God is on their side, and the Archbishop of Budapest a prayer to the Magyar *Honvéd* which began "God bless your bayonets that they may pierce deeply into your enemies' bellies."

Whether or not Hasek characters are recognizable as having been drawn from life, by his treatment of them, and especially of Svejk himself, his genius has endowed them with immortality. Svejk is the archetypal "little man", battling against the blind stupidities of authority and the double-edged weapon of his own simulated stupidity. Parrott convincingly argues that the attempt by left-wing critics to enlist Hasek/Svejk into the ranks of the Communist Party is of dubious validity. In 1928 martyr, Julius Fucik, defended Svejk from the attacks of the conservative nationalist Viktor Dyk, who had castigated the "Good Soldier as a 'dodger', a bad example to Czech youth and an insult to those who had

found a realistic and the apotheosis of realistic drama in Chekhov and Ibsen. This second collection takes his study of the popular elements in English theatre back to medieval drama.

This kind of study reveals all the bearings that await any historian trouting through the undergrowth in pursuit of a trail, which is really a tangle of trails. "Popular appeal" can mean many things and Davison justifies his collection of historical examples by interpreting it several ways. At its broadest his definition covers anything which exploits theatricality they are in a theatre. This includes but is not limited to famous plays and parts written for famous actors. The main problem with his analysis is that he expounds on theatrical illusion is not really a problem of popular appeal very largely is. There is a lot of material which can support this point about laughing and the world

died in the war. Fucik saw him, not merely as a soldier in the Austro-Hungarian army but as "a representative of all soldiers in all imperial armies". Even he had to admit that Svejk was no revolutionary.

Svejk is the type of the unrevolutionary little man, the half proletarian petty bourgeois, who, on joining the army, comes into direct contact with the machinery of the capitalist state.

Hasek himself was equally a puzzle to the Left. He began his political life as an anarcho-syndicalist, and spent a period in prison for political offences. Although he promised his prospective father-in-law, a well to do businessman, to abandon his anarchism as a condition of being allowed to marry his daughter, he continued to dabble in left-wing politics and to write - for any editor who would publish him - on political questions. There was, however, a streak of zany irreverence and mischievous irresponsibility which caused great pain to his wife, Jarmlita, and bewilderment to his friends. Some of his exploits are pure Svejk - as when he founded a pretentiously named Cynological Institute, which bought, sold, trimmed, dyed and stole dogs, and which also forged his pedigree. Svejk was, of course, no slouch as a cynoclept, as his master, Lukás discovered to his cost.

Svejk's encounters with police informers reflect Hasek's experiences as a political suspect. On one occasion he invented a Russian sounding name, which was actually the Czech phrase "kiss my arse" reversed, and had himself arrested as a spy, escaping with a five-day prison sentence when he explained to the court that, as a loyal subject of the Emperor, he was merely testing the efficiency of the police services.

Poor Jarmlita had a terrible time with him. During the two years between his marriage in 1910 and the birth of his son in 1912, in between bouts of drunkenness and unemployment, he attempted to commit suicide (although it is not clear whether it was a genuine attempt or a hoax), spent time in an asylum and

found a mock political "The Party of Moderate Shrink after becoming a walk-out on his wife and spent the next three years in "bohemian" existence, come Parrott puts it, in "vigorous writing", until he was called to serve in the army. He published a thousand short stories, articles and feuilletons, including the first stories, which appeared in 1912. Parrott's chapter "The gins: three Svejks or one?" the prewar Svejk with the distinction which appeared after the had served two years in the had been taken prisoner in Drušina, or Czech Legion, and the Bolsheviks. We are also told for the first time in English of Hasek as a journalist and story writer. One can only hope Parrott will himself realize that expressed in the appendix of Hasek's journalistic work, and make the best of his feuilletonary to the English-speaking world.

During the controversy about work which excited the mean literary world between the Dickens, Robbeis, Kafka and Svejk, he was compared to the latter. What, then, is cancer? contemporary, born in the same year, and in the same town, in the same way, he is not a brother.

The Communists insisted what to do about Hasek after take-over of power in 1948, he the Soviets decided that "Gashak" was progressive, volume edition of the works was started, of which published between 1955 and but none since Hasek's death. Hradcany. One still feels that made Husak, despite official leftist approval of Hasek, was a little uneasy that his joyless and spiritually empty regime should be sponsoring works of a man so irreverent, authoritarian and disruptive of established order. It matters whether Svejk, "this clown of the is Sincho Panza and Don Quixote one person, or whether he is a staff. It matters even less whether it was a good communist. Let the pages return to the reader. Svejk in all his glory - and no better guide for the Englishman than the incomparable

F. B. Singleton is visiting research fellow at the University of Bradford.

"planes of reality" intended mind the audience where it was what it was doing. The appeal as much about a tradition of theatre where playwriting is chosen to undermine the illusion on which stage normally based.

As a collection of examples the anti-realistic mode the wonderfully entertaining and to some of the conventional assumptions of theatre and the twentieth century drama and stage, and puts a convincing law of will and the liberty

Andrew Gurr is professor at the University of Reading.

# BOOKS

## Malignant process

Introduction by William A. Creasey Oxford University Press, £10.00 ISBN 0 19 502952 6

By Raymond W. Ruddon Oxford University Press, £10.00 ISBN 0 19 502943 7

Diseases that flesh is heir to be defined relatively simply or to their major features summed up in crisp metaphor. The manifestations of heart failure are the consequences of the failure of a pump; work of a filter. Until pumps and were described and compressed the functions of these organs were. What, then, is cancer? contemporary, born in the same year, and in the same town, in the same way, he is not a brother.

Another American emphasis which is difficult to accept over here (and which echoes Dr Creasey) is seen in chapter two, on incidence, epidemiology and aetiology, which cigarette smoking receives about one quarter of the space given to air and water pollution. The balance between lifestyle and environment, and the puritanical and the paranoid, seems to be disproportionately and inexcusably weighted towards the latter. However, the rest of this book is excellent and his accounts of differentiation, the malignant phenotype and oncogenes are valuable, enjoyable and up-to-date.

Ruddon's book succeeds in its aims. I can think of no better introduction to a graduate student especially at the cellular level. Read in conjunction with Creasey's book, it might provide the necessary reconciliation between clinical and experimental attitudes of mind.

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## Fledgling realities

Infancy and Epileptology: an evaluation of Piaget's theory edited by George Butterworth Harvester Press, £22.50 ISBN 0 85527 497 2

The Second Year: the emergence of self-awareness by Jerome Kagan Harvard University Press, £10.50 ISBN 0 674 79662 4

Mrs Thatcher may be no psychologist but when in the recent Commons' discussion about spying she remarked that you cannot prove a negative, she managed unwittingly to put her finger on the weakest point of child psychology. Anyone who claims that this or that ability develops during childhood is, willy nilly, dealing in negatives: its argument must be that young children lack some aptitude which is part of the older child's behavioural repertoire. Such claims seem reasonable enough at first sight: after all children do obviously change quite radically as they grow older. But to establish that some ability is not there at first and only arrives later on in childhood is a treacherous some, edging Mrs Thatcher, would say impossible task.

The problem is demonstrated in very different ways by these two books on human infants, one of which is edited by George Butterworth of the University of Southampton, and the other by Jerome Kagan, an American psychologist at Harvard University. Butterworth's interesting and provocative volume is almost entirely concerned with Piaget's theories about babies, and its predominant theme is that many of the skills which Piaget thought to be quite absent in young babies can now be demonstrated soon after birth.

Jameson's intention is to describe enough of the natural history of vertebrates as revealed by their life cycles and habits in the wild state for readers with only a basic knowledge of biology to pursue these interests further. It should therefore prove useful to first-year undergraduates.

The opening section, on the major factors that have influenced the biology and distribution of vertebrates, is generally provided in a brief resume of the phylogenetic relationships of the principal vertebrate groups. Here the author also considers the mechanics of evolutionary change and the relationship between zoogeographical distribution patterns and plate tectonics.

## Women's Pictures

Feminism and Cinema ANNETTE KUHN

The book's thesis is an exciting one: that feminism and cinema taken together could provide the basis for new forms of expression, providing the opportunity for a truly feminist alternative cinema in terms of film language, of reading that language and of representing the world. 90447 Paperback £4.95 20 May

## Freud and Jung

Conflicts of Interpretation ROBERT S STEELE

Dr Steele's hermeneutical study provides a re-orientation and new direction for psychological studies. 9057 6 £14.95

## Life Forms and Meaning Structure

ALFRED SCHUTZ

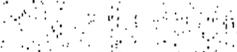
Translated, Introduced and Annotated by Helmut Wagner. Four unpublished essays. International Library of Phenomenology and Moral Sciences 9201 6 £11.95

## The Political Economy of Underdevelopment

SBD DE SILVA

Deputy Director, Agrarian Research and Training Institute, Colombo. International Library of Sociology 0469 9 664 pages £20.00. Published in association with the Institute of Southeast Asian Studies, Singapore. ISBN Prefix: 0 7100

Routledge & Kegan Paul 38 Stora Street, London WC1



Handwritten notes in the left margin: "The Red Commissar" and "The Good Soldier Svejk".

# BOOKS

## Adaptive narrative

**Darwinism Defended: a guide to the evolution controversies**  
by Michael Ruse  
Addison-Wesley, £6.95  
ISBN 0 201 06273 0

Several books have recently been published to coincide with the centenary of Charles Darwin's death. This one, by Michael Ruse, professor of history at the University of Guelph, has a clear purpose. Writing for the informed layman, Ruse aims to describe Darwin's theory of evolution by natural selection: its history, current status and prospects. Ruse opens with a standard account of Darwin's personal life, his arguments used to make the case for evolution by natural selection in *The Origin of Species*. However, he also provides an examination of its methodological and philosophical underpinnings, and philosophical misapprehensions as facts. Unlike Ruse, I doubt, for example, that the artificial selection analogy was influenced by J. F. W. Herschel's writings or that Darwin's "confidence of induction" from a variety of disciplines was inspired by W. Whewell's *lagna causa*. I did not read balanced judgments of these issues, but pompous and unjustified assertions.

As a clear introduction to neo-Darwinism is a prerequisite for appreciating contemporary issues in evolution theory, the second part of the book is crucial to what follows. Darwin was ignorant of what follows, and the subsequent integration of Mendelian population genetics and natural selection (to produce Huxley's "modern synthesis") has been an important advance. In his attempt to educate, however, Ruse covers too much material in such a telegraphic style that he surely fails. He merely swamps those who have read this far with baffling terms and unnecessary detail: the names of twenty amino acids cannot matter here; and complex figures from advanced texts are faithfully reproduced without apparent thought for the needs of the reader.

Those gifted with abnormal powers of concentration will, after reading this section, emerge with several misguided views and, worse, false information (Darwin abhorred this over all else). For example, though writing 25 years ago, Ruse uses neutral models and heterosis to explain the genetic variation found in natural populations; frequency-dependent selection is ignored. Many readers will be baffled by Ruse's failure to explain how a particulate mode of inheritance can be invoked to explain continuous variation. Slow rates of elimination of recessive alleles are "illusory" by the high frequency of Tay-Sachs disease in one culture, but there is no suggestion as to how the frequency could have got that high in the first place. Indeed, perhaps it is maintained there by heterosis. Variation in the snail *Cepaea* is referred to time and again but the maintenance of that variation is not discussed, while J. S. Jones's suggestions about the influence of temperature as a selective force are recorded as though confirmed. The Tay-Sachs and *Cepaea* examples show a sense of purpose in supporting the "scientific method" of adaptive story-telling: think of a morphological trait, imaginatively reconstruct a plausible scenario for its evolution, and nothing more needs to be done.

The author should have read the more recent works of his guru, Harvard's R. C. Lewontin, who has levelled some penetrating criticism of what this book terms "Darwinism as a genuine science". Darwinism is a genuine science, as Lewontin would agree, but Ruse does a bad job of presenting the case.

Ruse then deals with topics currently being debated by evolutionists: the origin of life, population ecology, animal sociobiology, and the patterns of evolutionary change seen in the

fossil record. The discussion of the origin of life gives a fair summary of our current understanding, although it is largely based on a well-presented description of researches reported in a 1978 *Scientific American* article by R. E. Dickerson. Similarly, the presentation of population ecology is heavily indebted to Roughgarden's 1979 book. Although it is none the worse for that, it does present a very specific view.

Ruse's version of the present status of animal sociobiology is marred by bias towards the views and writings of E. O. Wilson and D. P. Barash. For reasons that I cannot understand, three irrelevant photographs are reproduced from Barash's 1977 book. Ruse's "explanation" of parent offspring conflict does not explain the phenomenon at all and, thereby, does poor service to R. L. Trivers's concept. And G. C. Williams did not write his classic 1966 book *Adaptation and Natural Selection* in response to V. C. Wynne-Edwards book. Williams had already drafted his book before he came across the latter.

The final topic in this section deals with the claim that the fossil record shows relatively short periods of morphological change followed by millions of years of stasis in more or less continuously preserved lineages ("punctuated equilibria" or, according to J. R. G. Turner, "evolution by jerks"). As it is often argued that this claim poses a threat to Darwinism or neo-Darwinism, Ruse rightly responds that neo-Darwinism is not threatened.

In the final sections of the book, dealing with the morphological and behavioural evolution of man and with a refutation of "scientific creationism", Ruse seems to misunderstand E. O. Wilson's position on ethical relativism. Otherwise, I found these sections clear and innocuous. For scientific creationists they will be sacrilege, but that is what Ruse intended. The suggestions for further reading are annotated but the book is meant for the novice, then scholarly but boring. *Outgroup and Phylogeny* is not at all sensible. At least Gould is correct, whereas two other selections, D. P. Barash's *Sociobiology and Behavior* and Marshall Sahlin's *The Use and Abuse of Biology*, have been widely criticized for their inaccuracy on many issues.

**Paul Harvey**

Paul Harvey is lecturer in biology at the University of Sussex.

## Diagnostic tool

**Nuclear Magnetic Resonance and its Applications to Living Systems**  
by David G. Gadian  
Clarendon Press: Oxford University Press, £15.00  
ISBN 0 19 854627 0

Over the past 20 years nuclear magnetic (n.m.r.) spectroscopy has been established as one of the foremost techniques for determining molecular structures and conformations of complex molecules in solution. More recently two new areas of application have emerged which are attracting the attention of medical research workers. In the first, high resolution n.m.r. has proved to be an effective tool for studying metabolic processes within localized intact living tissues and organs. In the second, n.m.r. has been used to obtain anatomical images of the proton density tomograms of biological specimens ("spin-echo imaging"). Both methods provide a safe, non-invasive diagnostic tool and their development has aroused intense interest among biochemists and clinicians. Dr Gadian's textbook is aimed at providing such people with the necessary n.m.r. background information required to understand the many possible applications.

Dr Gadian has succeeded completely in providing a text which can be used by those with no prior knowledge of n.m.r. spectroscopy. The book concentrates mainly on the



Still life, 1943, by M. C. Escher. Illustration taken from Escher: with a complete catalogue of the graphic works, edited by J. L. Locher and published by Thames & Hudson at £35.

metabolic studies, an area in which Dr Gadian and his colleagues have played a dominant role. By observing the n.m.r. signals from 31p nuclei (100 per cent naturally occurring isotope) in phosphorus containing metabolites such as phosphocreatine, adenosine triphosphate (ATP), inorganic phosphate and sugar phosphates present in intact organs or cells, it is possible to monitor their energetic state and thus assess the metabolic state of living tissues or organs. All this detailed biochemistry is available without perturbing the intact organ. It is not surprising, therefore, that muscle physiologists who have pioneered biopsy and freeze clamping procedures are now attracted by the simplicity of the n.m.r. approach. 13C-n.m.r. spectroscopy can also be used to monitor metabolic processes by following the biosynthetic fate of carbons introduced using 13C-labelled precursor molecules.

Dr Gadian carefully describes the type of information available in the n.m.r. spectra and documents the chemical shift information required to understand these spectra. He indicates the experimental procedure needed to obtain good quantitative data and seeks to expose any experimental problems involved. To optimize sensitivity and localization on a particular organ, a purpose-built probe (containing a coil for transmitting and detecting radiofrequency signals) is often required, and Dr Gadian has included a very useful section on probe design with practical advice for those embarking into this area.

Because the book is aimed at biochemists and clinicians with no previous knowledge of n.m.r. spectroscopy, special attention has been given to introducing the necessary theory. Dr Gadian has been very successful in reducing this complex subject to an easily understandable level without too much oversimplification. The theoretical basis of n.m.r. experiment is treated in detail and a section on n.m.r. parameters pays particular attention to relaxation times. Chemical exchange processes and their measurement using saturation transfer methods are discussed in the context of measuring within intact tissues.

Dr Gadian wisely does not attempt a comprehensive coverage of all the topics covered in the book. However, he does provide examples of all the major areas of application, including recent clinical applications related to the muscle disorders, monitoring the

viability of transplant organs, and determining the effects of drug therapy. Dr Gadian's excellent book conveys the current excitement of workers in this field and also provides a very good teaching guide for those tempted into this area.

**James Feeney**

James Feeney is Centre Controller of the MRC Biomedical NMR Centre, National Institute for Medical Research, Mill Hill, London.

## Useful isotopes

**An Introduction to Nuclear Physics with Applications in Medicine and Biology**  
by N. A. Dyson  
Ellis Horwood: Wiley, £19.50 and £8.90  
ISBN 0 85312 265 2 and 376 4

**The Use of Radioactive Isotopes in the Life Sciences**  
by J. M. Chapman and G. Ayrey  
Allen & Unwin, £10.50 and £5.50  
ISBN 0 04 570011 7 and 570012 5

There is no shortage of books suitable as textbooks for medical physicists and radiobiologists which deal with some aspects of nuclear and radiation physics. Since J. H. Freeman's *Applied Nuclear Physics* went out of print, however, there has been no textbook which would present a coherent, authoritative and adequate coverage of those aspects of nuclear science which are of particular importance for applied physicists in general and medical physicists in particular. N. A. Dyson's book is an ambitious and quite successful attempt to make good this deficiency.

The material covered includes both nuclear and radiation physics, together with selected examples of the applications of radioisotopes. The theory is limited to that needed to understand the applications outlined, the discussions of basic principles with matter, of radioactive decay and examples of nuclear reactions providing good case and competent style. Nuclonic instrumentation, the

production and applications of radioisotopes and the applications in both biology and medicine are dealt with in separate chapters devoted to analytical applications of radioisotopes, very inadequately at textbook level in the present state of the author's personal use in this field.

Although the book is an advance towards the production of a nuclear science and technology syllabus for medical physicists (and other practitioners) in applied nuclear science, the few unsatisfactory aspects of the chapters are fairly minor. For example, there is a comprehensive treatment of a Geiger-Müller counter only a brief comment on scintillation detectors. The section on radiographic imaging does not provide adequate coverage of tomography, a basic tool of nuclear medicine. Radioisotope applications, such as use of labelled gases, are treated in depth, perhaps reflecting the title past interests of the author, whereas the use of modern imaging with short-lived tracers is only briefly mentioned. And no doubt that readers would appreciate an appropriate selection of problems at the end of each chapter.

The graphical illustrations are of uneven quality, and some of the text is unnecessarily long. The book lacks a pulse, since the neutron detection would have been fitted from a diagram, which has explained the topic more than does the text. The references at the end of each chapter are times very dated, and the bibliography with regard to availability and relevance seem to be in order.

Despite these criticisms, the book is worth reading in who wish to gain a good understanding of the principles of nuclear radiation physics applied to the needs of biology and medicine. The title of the book by Chapman and Ayres perhaps defines the scope of this publication. The authors state that their "present intention is to provide an adequate background knowledge of radioactivity and to outline the methods used when working with radioisotopes..." a promise which has been adequately fulfilled.

Although the opening chapter introduces the concepts of the isotopes and radioactivity, I think it will not be the only source of information for the future biologist. Following the obligatory chapters on radiation protection and the handling of radioactive materials, the reader is presented with a description of the laboratory techniques for detecting and measuring radioactivity, centring on scintillation detectors, described in sufficient detail for the benefit of a student. The final chapter outlines other analytical methods frequently used in biological research, including isotope dilution analysis, density analysis, autoradiographic detection and, albeit very briefly, radioimmunoassay, with its rapidly expanding applications in biochemistry and medicine, might, however, have been a broader treatment.

The book is furnished with excellent descriptions of practical laboratory experiments illustrating the important aspects of methodology mentioned in the text. Thus, it is likely, that this book will find broad use as a modern text for students of life sciences. It is also appealing to those researchers who wish to use radioisotope tracers in their work without burdening themselves with more advanced topics.

**K. V. Ettinger**

K. V. Ettinger is reader in the department of biomedical physics and engineering at the University of Leeds.

### Honorary degrees

**Loughborough**  
The following are to be awarded honorary degrees in July:  
Dr Sir Donald Barron, chairman of the Island Bank.  
Dr Toshi M. J. Bui, chairman of the university's Institute of polymer technology, Dr E. C. Leese, director of the Hong Kong Polytechnic, Professor Siegfried Meuret, formerly head of R. D. Maschinenfabrik, Augsburg-Munich, Germany.  
Dr John A. B. Greene, formerly senior lecturer in the department of transport technology.  
Dr D. E. Broadbent, formerly director of the Medical Research Council Applied Psychology Research Unit.

### Grants

**Edinburgh**  
£70,789 from Albright and Wilson - £200 in support of research on plant cell culture, under direction of Professor M. M. Young.  
£12,000 from CIBA-Geigy Pharmaceuticals Division in continued support of research on the establishment of a cell culture bank, under direction of Dr J. G. Gall.  
£12,000 from MRC for research on factors affecting the spread and persistence of methicillin resistance plasmid genes, under direction of Dr S. G. B. Ames.  
£29,865 from SERC for research on the establishment of a cell culture bank and CII containment laboratory, under direction of Professor K. Murray and Dr J. G. Gall.  
£70,800 from SERC in support of research on semantics of non-determinable and concurrent computation, under direction of Dr G. D. Florakis and A. J. R. G. G. Miller.  
£26,461 from SERC in support of research on the study of nuclear reactions using heavy ion beams and heavy ion projectiles, under direction of Dr A. C. Sier and Dr D. G. Stott.  
£20,050 from SERC in support of research on particle interactions, under direction of Professor D. J. Wallace, Dr K. C. Chen and Professor F. W. Ilgus.  
£20,272 from Scottish Home and Health Education Group for research on the evaluation of stopping smoking, under the direction of M. Dudgeon.  
£13,376 from Scottish Home and Health Department for research on electron spin in catecholamine storage granules, under direction of Dr D. K. Apps and Dr J. H. D. G. Miller.

### Chair

Professor R. H. Ottewill, currently professor of chemistry at the University of Bristol, has been appointed as Leverhulme professor of physical chemistry at the same university from August 1, 1982 to the end of the School of Chemistry. Dr Crispian Scully, senior lecturer in the department of oral medicine and pathology, Glasgow Memorial Hospital, and School has been appointed as chair in dentistry at the University of Bristol.  
Dr A. C. Tomlinson has been appointed to a personal chair in English and Dr R. J. G. Savage to a personal chair in geology. Both appointments are at the University of Bristol, with effect from August 1, 1982.

### Forthcoming Events

"The Question of Alghreb Unity" is the theme of the annual conference of the North African Studies organized jointly by the Maghreb Review and the Maghreb Studies Association, City of London School of Economics, Vers Avenue Row (A 160) Main Building, Houghton Street, London WC2. The conference will examine the ways in which the Maghreb has been perceived, socially, economically, and culturally. Details from the Maghreb Studies Association, 96 Marchmont Street, London WC1.  
"The Eye of the Beholder" a seminar on Indian Writing in English, a seminar organized by the Indian Department of the Commonwealth Office, 100 Victoria Street, London SW1. Details from Maggie Butcher, seminar organizer at the above address.  
"The Impact of Computers on Business Education" a one day conference, is being held at the City of London School of Economics, Minor's Tower Hill, London on July 9. The conference looks at input and output conditions in relation to current developments in technology. Details from Michael Apple, S. J. Mackay, Faculty of Business Studies, NELP, Longbridge Road, Dagenham, Essex.  
D. W. H. Cuckroft, vice-chancellor of the New University of Ulster and chairman of the committee of inquiry into the teaching of mathematics in schools will be speaking on the report of the committee and its implications at a public forum in the Faculty lecture theatre, University of Lancaster at 7pm on June 29. The forum is intended for primary and secondary school teachers and other interested parties, including parents. Details from Susan Lucas, administrative assistant, Lancaster University School of Education, University House, Lancaster.

### Research Unit

Dr F. L. Ruse, formerly research manager, ICI Ltd. MAI, Dr M. Mackell, tennis player, coach and commentator. Mr E. Barnsley, designer and craftsman. CNA.

### Chair

Dr Richard Hogart, warden of Goldsmiths College, Sir John Wood, professor of law at the University of Sheffield, Dr Donald Hope, director of the Marine Society, Sir Norman Lindop, formerly director of Hillfield Polytechnic and now head of the School of Osteopathy, Dr Teoh Professor Tom Kilburn, professor of computer science, Manchester University. Dr Mr Donald Ross, director of the department of surgery at the Institute of Cardiology.

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# NOTICE BOARD

### Open University programmes June 19 to June 25

23.00	Open Forum 18 (D102; prog 9)	23.00	Partial differential equations of applied mathematics. Continuing The Case Study (M32); prog 5)	7.50	Technology foundation course. Conflicts of interest (A209; prog 11)	8.50	Introduction to statistics. Behaviour of Functions (M208; prog 6)	11.00	Control of technology. Does't Anybody Want to Know? (T241; prog 3)	11.00	Control of technology. Does't Anybody Want to Know? (T241; prog 3)	11.00	Control of technology. Does't Anybody Want to Know? (T241; prog 3)	11.00	Control of technology. Does't Anybody Want to Know? (T241; prog 3)
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### Noticeboard is compiled by Patricia Santinelli and Mila Goldie

### Appointments

**Universities**  
**Aberdeen**  
Finance director: William Jamieson  
**Heriot-Watt**  
Promotions to Senior Lecturer: William J. Frith (physics); Philip John (chemistry); Neil M. Kay (economics); James Peden (petroleum engineering).  
Research Associates: J. S. Buchanan (biological sciences); D. J. Mackenzie (building); I. A. Shantin (computer science); I. Dymov (electrical and electronic engineering); Y. M. M. Leung (mechanical engineering); G. H. Cuthill (teaching company programme).  
**Newcastle upon Tyne**  
Visiting Professor: Mr J. Mackenzie, principal of Bolton Institute of Higher Education (agricultural marketing 1982/83).  
**Sheffield**  
Fresh Visiting Professor: Dr J. Halpern (chemistry).  
Senior Lecturer: Dr S. H. Norris (orthopaedics).  
Lecturers: P. Anderson (child dental health); D. Chappell (economic studies); Dr S. A. C. Dunder (pathology); Dr I. M. Simes (surgery); Dr W. T. Houghby, Dr R. A. Prithak and Dr S. A. W. Salih (paediatrics); Dr D. A. Jordan (pure mathematics); Dr R. J. Martin (probability and statistics); Dr A. Moir and Dr D. E. Ward (microbiology); Dr D. I. Rowley (orthopaedics); Dr S. K. Smith (obstetrics and gynaecology).  
**Surry**  
Librarian: Mrs E. A. L. Esteve-Coll.  
Senior Lecturer: Dr J. A. Lamb (chemical engineering).  
Lecturers: M. N. Sweeting, Dr C. P. Tynan, Dr R. C. Fairley (electronic and electrical engineering); Dr I. P. Castro, J. S. W. Taylor (mechanical engineering).  
Honorary visiting senior research fellow: W. Watt (metallurgy and materials technology).  
Honorary visiting research fellows: M. Kerridge, E. Thornton.  
Honorary visiting fellows: C. Hinks, S. E. Searshall (physics).  
Honorary visiting professors: Dr A. H. Johnston, D. M. Conyngh, Dr A. N. Warden (biochemistry); R. Y. Cartwright (microbiology); L. H. Poole (linguistic and international studies); Dr J. M. G. (chemistry); Institute of Industrial and Environmental Health and Safety; Dr M. Sharratt (Roberts Institute / Department of Chemistry).  
Honorary visiting lecturer: Dr J. S. L. Fowler (Roberts Institute / Biochemistry).  
Honorary visiting senior lecturer: P. F. Goddard (biochemistry).  
Professorial research fellow: Professor R. Thomas (chemistry).  
Staff leave: Joan W. Parnell and Miss A. M. Bond (higher education).

### Recent publications

6.40	Introductory electronics. Power Amplifier (T26); prog 6)	7.60	Graphs, networks and design. Rook Polymers (M205; prog 9)
7.00	Engineering mechanics. Thermofluid and energy. Bernoulli's Equation (T23); prog 5)	7.60	The earth, structure, composition and evolution. Geomorphology (M237; prog 8)
7.30	The handicapped person in the community. The History of Architecture and Design (M206; prog 9)	7.60	Social science foundation course. "Evaluating Theories" (D102; prog 10)
7.50	Management and the human factor. The History of Architecture and Design (M206; prog 9)	7.60	Crustal and mantle processes: case studies in earth science. The Dataland of Statistics (M221; prog 8)
8.10	Management and the human factor. The History of Architecture and Design (M206; prog 9)	7.60	Crustal and mantle processes: case studies in earth science. The Dataland of Statistics (M221; prog 8)
8.30	Thought and reality. Central themes in Wittgenstein's philosophy. Locke, Russell and Wittgenstein (M204; prog 9)	7.60	Crustal and mantle processes: case studies in earth science. The Dataland of Statistics (M221; prog 8)
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Polytechnics continued

The Hatfield Polytechnic

Applications are invited from qualified experienced persons for the post of:

Counsellor, LI/SL

Salary inclusive of outer London weighting LI £7,086-£11,263 SL £10,404-£12,195 (bar)-£13,047 Burnham conditions of service

Post available from 1st January, 1983, or earlier if possible. Alternatively applications will be considered for two fractional appointments.

Please quote reference 519. Further details and application forms from: The Staffing Officer, The Hatfield Polytechnic, PO Box 109, Hatfield, Herts AL10 9AB. Closing date: 9th July, 1982.

SHEFFIELD CITY POLYTECHNIC DEPARTMENT OF URBAN & REGIONAL STUDIES

RESEARCH ASSISTANT

"An economic analysis of the impact of long term trade contracts on minerals markets."

The appointment will be for a two year period and the person appointed will be expected to seek registration for a CMAA higher degree.

Applications are invited from persons with a good honours degree in economics. Candidates graduating in 1982 will be considered.

Salary scale: £4,602-£5,250 p.a. (subject to review).

Application forms and further details are available from the Personnel Officer, Sheffield City Polytechnic (Dept. THES), Halfords House, Fitzalan Square, Sheffield S1 2BB, or by telephoning 20811 ext 387. Completed forms should be returned by 2nd July, 1982.

SHEFFIELD CITY POLYTECHNIC DEPARTMENT OF ECONOMICS AND BUSINESS STUDIES

LECTURER III IN ECONOMICS

To join an established team of economists. Applicants should be able to contribute to courses in basic economics and to assist in developing a specialist. An interest in Business Policy would be an advantage, but is not essential.

The successful candidate will be required to teach legal studies on multi-disciplinary courses at degree and post-graduate levels.

Salary Scale: £9,462-£10,431 per annum (pay award pending). Under current salary regulations and subject to satisfactory performance, the successful candidate can normally expect incremental progression to the Senior Lecturer Scale of which the present maximum salary is £12,141 per annum.

Application forms and further details are available from the Personnel Officer, Sheffield City Polytechnic (Dept. THES), Halfords House, Fitzalan Square, Sheffield S1 2BB, or by telephoning 20811 ext 387. Completed forms should be returned by 2nd July, 1982.

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LECTURER II/SENIOR LECTURER in Banking Studies

To assist in teaching and administration of well supported professional banking courses and to develop banking studies in other areas.

Details and application forms from: Establishment Clerk, The Polytechnic, Wolverhampton WV1 1SB or Tel: Wolverhampton (0902) 710654 (ansaphone).

BRIGHTON POLYTECHNIC Department of Mathematics

Lecturer II/ Senior Lecturer

To teach on modern applied mathematics, including statistics, on a range of degree courses, and assist with course development.

Applicants should have a good honours degree and/or higher degree, specialist knowledge in the area e.g. Applied Statistics, Operational Research, and have had experience of its application in the business, management or commerce environment. Teaching experience is very desirable but applicants with an appropriate work experience only will be considered.

Salary: Lecturer II: £6,402-£10,431 Senior Lecturer: £9,624-£12,141 Further details and application forms may be obtained from the Deputy Head of Personnel, Brighton Polytechnic, Moulsecomb, Brighton BN2 4AT. Tel. No. Brighton 893655. Ext. 2637. Closing date 2 July, 1982.

PLYMOUTH POLYTECHNIC

Faculty of Maritime Studies

RESEARCH ASSISTANTSHIP Risk Analysis of Small Ships

Salary: £5,355-£5,808

Candidates with or expecting to obtain this year a good Honours Degree are invited to carry out a programme of work in the above area.

The aim is to establish the risk of loss of life and vessel, particularly through capsizing and foundering, and to compare these risks with those in relevant shore based industries, and to analyse the sources of the risks determined.

The second stage of the project will be to assess the viability of using probabilistic approach to assessing the risk of loss due to varying demand and capability. The work will be carried on in collaboration with major national institutions.

Research Assistants are expected to register for a Higher Degree with the CMAA. Appointments are for a period of one year in the first instance renewable for a second and third year, subject to satisfactory progress.

Application forms to be returned by Friday, 9th July, 1982, can be obtained with further particulars from the Personnel Officer, Plymouth Polytechnic, Drake Circus, Plymouth PL4 8AA.

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THE POLYTECHNIC OF WALES DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

POST OF SENIOR LECTURER/LECTURER II IN MATHEMATICS

Salary £5,462 to £12,141 (under review)

The person appointed should possess a good honours degree in Mathematics, preferably a higher industrial degree, and substantial experience. The ability to supervise research students would be an advantage.

He/she will be required to contribute to the development of the department's vocationally oriented courses, and to work in higher subject areas at least to degree level in applied work on both internal courses and externally organized courses, e.g. engineering.

The person appointed would have to maintain close links with industry. Application forms and further particulars are available from:

The Personnel Officer, The Polytechnic of Wales, Pontypridd, Mid Glamorgan CF37 1DL Telephone: (0443) 406133 ext. 2021

CLOSING DATE: 2nd July, 1982.



LONDON THAMES POLYTECHNIC SCHOOL OF BUSINESS ADMINISTRATION

PRINCIPAL/SENIOR LECTURER IN ACCOUNTING AND FINANCE

Applicants for this position should have a relevant degree and professional qualification and experience in business and accounting, preferably with a higher degree in research.

Applicants should be able to teach computing and/or systems analysis to Honours Degree level in the following posts:

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LECTURER I/SENIOR LECTURER IN MATHEMATICS

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The School runs Honours Degree and other courses in Mathematics and Computing and contributes to courses in other departments. There are research opportunities in Mathematics and Computing.

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RESEARCH ASSISTANT

Applications are invited from honours graduates to staff on a two year contract with a salary of £5,355-£5,808 p.a. Post-graduate students are encouraged to apply.

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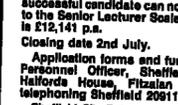
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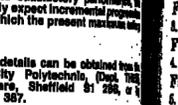
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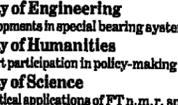
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Salary scales: Lecturer I

Colleges of Further Education

**EDGE HILL COLLEGE OF HIGHER EDUCATION**

St Helens Road, Ormskirk, Lancashire L39 4QP  
An Associate College of the University of Lancaster

**DEPARTMENT OF EDUCATION  
PRINCIPAL LECTURER  
IN CURRICULUM STUDIES**

Applications are invited for this important post tenable from 1st September, 1982 or as soon as possible thereafter.  
Salary Scale: Principal Lecturer £11,285 x 7 increments to £14,238 (under review)  
Further particulars of the post may be obtained from the Personal Assistant to the Director.  
Completed application forms should be returned to the Director by 31st July, 1982.

**EXETER COLLEGE OF ART AND DESIGN**

Principal: Clifford Flavell A.T.D.

**FIVE FELLOWSHIPS IN FINE ART**

Teaching Fellowships: One Painting, One Sculpture, one A.A. (1982-83), one Architecture, one providing the opportunity to develop personal work.

Three International Teaching Fellowships in Fine Art based on Exeter and Exmouth.

All one Academic session commencing October 1982.

Application forms on receipt of stamped addressed envelope from Chief Administrative Officer, Exeter College of Art and Design, North Street, Exeter, EX2 2SA, to be returned by 28th July, 1982.

Administration

**Middlesex Polytechnic  
Assistant Director**

**£22,725 pa inc**

The Assistant Director will share the general management of the Polytechnic with fellow members of the Directorate. The post will include responsibility for a range of the following: Physical Resources, Learning Resources, Library, Computing, Relationships with Students' Union, Sports, Welfare, Student Accommodation, Catering, Careers, Governing Body matters. Experience of management at a senior level and demonstrated powers of organisation and leadership are essential. A background in science or engineering would be particularly welcome.

Further information write quoting ref A270/D, Mr R Lewis, Acting Clerk to the Governing Body, Middlesex Polytechnic, c/o The Personnel Office, 24 Chase Side, London N14 6PN. Closing date 12 July.

**CROYDON STATISTICS AND OPERATIONS RESEARCH COMBINATION**

47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.

**Holidays and Accommodation**

TELETYPE: Applications available from 10.00 am to 10.00 pm, 7 days a week, 24 hours a day.

**Colleges of Art**

**WINCHESTER SCHOOL OF ART**

ASSOCIATE LECTURERS IN PRINTING TECHNOLOGY

Applications are invited for the position of Associate Lecturer in Printing Technology. The successful candidate will be responsible for the teaching of the course in the evening class. The post is tenable from 1st September 1982. Salary: £11,285 x 7 increments to £14,238 (under review). Further particulars of the post may be obtained from the Personal Assistant to the Director, Winchester School of Art, 100, High Street, Winchester, Hampshire, SO9 1AB. Closing date: 31st July 1982.

**Given the nature of the work...**

For further information and an application form, please write to: Mr R Lewis, Acting Clerk to the Governing Body, Middlesex Polytechnic, c/o The Personnel Office, 24 Chase Side, London N14 6PN. Closing date: 12 July 1982.

DARTINGTON COLLEGE OF ARTS

**PRINCIPAL**  
(Re-advertisement)

(Burnham Grade V: £17,703-£18,612 under review)

The Governors are seeking to appoint a person who can develop the pioneer work of the College with its particular concern for the roles of the arts and artists in society. They have decided that this post should be re-advertised before a final shortlist is drawn up, in order that they may choose from a broader range of applications than those which they are already considering. Applications are invited from men and women from a wide variety of backgrounds who could contribute to the College, although not necessarily as arts specialists.

Details may be obtained from the Senior Administrative Officer, Dartington College of Arts, Toines, Devon TQ9 6EJ.

General Vacancies

**LONDON WARDEN**

Warden required for College housing for male and female university students in Central London. Applicants should be aged 25-35, in agreement with the university milieu, and Catholic for preference.

The post is residential; salary negotiable according to qualifications and experience. Apply to: Senior Provincial, 33 Grosvenor Rd., London SW1 2EH, by 15 July 1982. His salary negotiable.

Overseas

**KING SAUD UNIVERSITY, RIYADH Saudi Arabia**

The Arabic Language Institute of the King Saud University wishes to fill the following vacancies:

Post	Field of Speciality	Conditions
Professor	Contrastive or Error Analysis and Comparative Studies	Ph.D in Applied Linguistics or General Linguistics and obtaining this title at a university accredited by King Saud University.
Assistant Professor	Phonetics, Arabic Phonology	Doctorate in this field of specialization.
Language Instructor	Teaching Arabic to non-Arabic speakers	MA or BA with a minimum of 3 years' experience, or Higher Diploma in Teaching Arabic after BA with one year's experience in field of specialization.
Lecturer	Linguistics or Methods of Teaching Arabic to Non-Arabs	MA in this field of specialization.

Applications should be sent attached with photocopies of academic and experience certificates (non-returnable) to the following address:

Dean, King Saud University, Arabic Language Institute, PO Box 2449, Riyadh, Saudi Arabia.

Selected candidates will be advised of place and date of interview.

NURSE EDUCATION DEVELOPMENT COMMITTEE NEW ENGLAND REGION

**CO-ORDINATOR OF NURSE EDUCATION**

Applications are invited for the position of Co-ordinator of Nurse Education, located at the Armidale College of Advanced Education.

The person appointed to this new position will be a member of the Nurse Education Development Committee, New England Region and will be responsible to it for the development and oversight of a co-operative nurse education programme involving the Tamworth Base Hospital and the Armidale & New England Hospital in conjunction with the Armidale College of Advanced Education.

Qualifications: Registration in New South Wales as a general nurse or Master's degree.

Salary: In the range Avel, \$28,127-\$30,118, equivalent to Senior Lecturer II level.

Term of Appointment: 3-5 years.

Further information from the Chairman, Nurse Education Development Committee, New England Region, c/o The Registrar, Winchester School of Art, 100, High Street, Winchester, Hampshire, SO9 1AB. Closing date for applications: 18th July 1982.

WESTERN AUSTRALIAN INSTITUTE OF TECHNOLOGY

**School of Art and Design**

**Senior Lecturer - Fine Art (Painting)**

Salary Range: \$A28,127-\$A32,782

An accomplished painter is required to teach and provide academic leadership in the area of painting in the B.A. Degree in Fine Art. Ability to teach printmaking and contribute to the history/art theory programme desirable. Duties include responsibility for aspects of course administration/organisation. This position is available with permanent tenure. Conditions include fare for appointee and family plus assistance with removal expenses. Ref. 491.

**School of Physics and Geosciences**

**Visiting Physicist**

We have an immediate need for an experimental physicist with one or more of digital signal processing, data logging and computer graphics (especially image enhancement). He will include undergraduate teaching and supervise development. The position is available until December 1982. An experienced physicist would be preferred, however persons in final stages of Ph.D. with teaching experience are also encouraged to apply.

A package of up to \$A12,000 (inclusive of return air fare) available depending on qualifications and experience.

Applications including names, addresses and telephone numbers of three referees should be submitted by 2nd July to the Migration Officer, Western Australia House, 11 Strand, London WC2R 0AJ, from whom further information may be obtained. Please quote appropriate reference interviews will be conducted at Western Australia House early in July.

**University of Natal SENIOR RESEARCH FELLOW (Senior Lecturer) or RESEARCH FELLOW (Lecturer)**

Applications are invited from suitably qualified persons, regardless of sex, religion, race, colour or national origin for appointment to the post of Senior Research Fellow (Senior Lecturer) or Research Fellow (Lecturer) in the Centre for Applied Social Sciences.

The Senior Research Fellowship is a permanent post on the University establishment carrying Senior Lecturer status. The salary range is R16,827-R24,048. The commencing salary notch will be dependent on the qualifications and/or experience of the successful applicant. In addition, a service bonus of 83 per cent of one month's salary is payable subject to Treasury regulations.

In the event of an appointment being made at Lecturer level the salary range will be R12,057-R22,173.

Applicants must be highly qualified in one or more of the social sciences, be of proven research ability and have experience in teaching, supervising and administration. Publications in the field of applied industrial and labour research, applied planning research or development studies will be a recommendation. In addition to his or her research studies the appointee will have a active part in postgraduate and undergraduate teaching. The successful candidate will be expected to assume duty as soon as possible.

Application forms, further particulars of the post and information on pension, medical aid, group insurance, staff housing, housing loan and subsidy schemes, long leave conditions and travelling expenses on first appointment are obtainable from: The Registrar, South African University, 278 High Holborn, London WC1V 7TH or The Registrar, University of Natal, King George V Avenue, Durban, 4001, South Africa, with your applications, on the prescribed form, must be lodged not later than 30th July, 1982, quoting the reference number D.57/82.

**OMAN The British Consulate in Muscat**

Post 1: Business and Administration Officer (Ref. 12/82) Post 2: Lecturer in Petroleum Development (Ref. 13/82)

Training Centre, Petroleum Development Oman, P.O. Box 100, Muscat, Oman.

References: 22 A-82-8

Details: For post 1, the applicant should have a minimum of 5 years' experience in business and administration. For post 2, the applicant should have a minimum of 5 years' experience in teaching and research in petroleum development. For both posts, the applicant should be a British citizen or have the right to work in Oman.

Qualifications: Post 1: A minimum of a B.A. degree with a minimum of 2 years' experience in business and administration. Post 2: A minimum of a B.A. degree with a minimum of 2 years' experience in teaching and research in petroleum development.

Salary and conditions: The salary for post 1 is OMR 1,200 per month plus allowances. The salary for post 2 is OMR 1,200 per month plus allowances. Conditions of service are those of the Omani Government.

Application forms, further particulars of the post and information on pension, medical aid, group insurance, staff housing, housing loan and subsidy schemes, long leave conditions and travelling expenses on first appointment are obtainable from: The Registrar, South African University, 278 High Holborn, London WC1V 7TH or The Registrar, University of Natal, King George V Avenue, Durban, 4001, South Africa, with your applications, on the prescribed form, must be lodged not later than 30th July, 1982, quoting the reference number D.57/82.

Overseas continued

**Bahrain**

The Ministry of Health of this peaceful, commercial and service centre for the Gulf, where the large expatriate community enjoys a high standard of living, wishes to make the following appointments:

**Registrar**  
from £14,700 p.a. tax free

Required by the Office of the Registrar and Student Affairs at the College of Health Sciences, a co-educational institution where the language of instruction is English. As part of the responsibilities, the successful candidate will be required to contribute to the college's aims to develop an educational system that can meet growing and needed health professional requirements, such as nurses, laboratory technicians and others, not only in Bahrain but in the Gulf area as a whole.

A University Degree or equivalent graduate studies in Education or a Health discipline with at least two years of teaching experience in a recognised institute are required. It is also essential to be well versed, through practical training in Registrar's general duties.

**Head, Department of Social & Behavioural Sciences**  
from £17,100 p.a. tax free

To play a major role in planning, co-ordinating and administering all activities related to the functioning, growth and development of the Department at the College of Health Sciences.

Psychology or Sociology together with a number of years teaching and/or research experience are very desirable. In addition, a teachers training certificate is necessary, as is a practical working knowledge in writing instructional materials, booklets and preparing handouts.

Initial interviews will be conducted in London during the week commencing 28th June, 1982.

The benefits associated with these appointments include free, furnished accommodation on married or single status, settling-in and education allowances, liberal leave, state medical care, paid family air fares and air cargo entitlements etc.

Up to date and complete resumes together with copies of qualification documents should be sent to C. J. Dentington, BA, or A. J. Haldim, MSc MBA, Adviser to the Ministry on these appointments.

**ASA Consultants**  
or telephone for a Confidential Personal History Form. A & A Consultants Ltd., 10 Little Portland Street, London W1N 5DF. Tel: 01-631 4184 Telex: 8956538.

WESTERN AUSTRALIA

**LECTURER-MINING AND ENGINEERING SURVEYING (Ref 456A)**

Teach surveying, survey computations and cartography. Qualified surveyor or mining/civil engineer with extensive surveying experience required.

Salary range: \$20,963-\$27,593.

Applications: details including names and addresses of three referees should be submitted in duplicate not later than 2nd July, 1982 to the Migration Officer, Western Australia House, 115 Strand, London WC2R 0AJ, from whom further information may be obtained.

Polytechnics continued

**UNIVERSITY OF CAPE TOWN RESEARCH OFFICER (Department of Biochemistry)**

Applications are invited for the above post at the post-doctoral level. The applicant should have a strong interest and experience in the field of recombinant DNA and sequencing technology to join a group working on structure and function of chromosomal proteins. The appointment will be for three years in the first instance within the scale R12,857 x 780 - R16,557 x 936 - R22,173 according to qualifications and experience. For overseas candidates, a travel grant of up to R1,500 to Cape Town will be provided. The post should be filled during 1982. Further information may be received from: Professor C. von Holt, to whom applications should be submitted, Department of Biochemistry, University of Cape Town, Rondebosch, 7700, Cape Town, South Africa.

Salary: Lecturer II £8,462-£10,431 Senior Lecturer £9,624-£12,141

Further details and application forms may be obtained from the Deputy Head of Personnel, Brighton Polytechnic, Moulescomb, Brighton BN2 4AT. Closing date: 19th July, 1982.

The Times Higher Education Supplement

**SPECIAL BOOK NUMBERS FOR 1982**

Month	Day	Subject
SEPTEMBER	17	Education (II)
	24	Economics (II)
OCTOBER	1	Biological Sciences (II)
	8	University Presses
	15	English (II)
	22	Sociology (II)
	29	Maths & Physics (II)
NOVEMBER	5	History (II)
	12	Psychology (II)
	19	Politics
	26	Computer Science

**SPECIAL FEATURES FOR 1982**

Month	Day	Subject
June	25	Computers in Higher Education
July	2	Education & Training
September		High Education in the
	10	Common Market

Colleges of Higher Education continued

**SCOTTISH COLLEGE OF TEXTILES A Central Institution of Higher Education**

**LECTURER IN FASHION/DESIGN MANAGEMENT**

Applications are invited from persons with Honours Degree level qualifications in Fashion/Design Management to teach aesthetic and technical Garment Design, as well as Design Management, to sandwich course students preparing for a College Diploma (degree equivalent) and A.C.F.I. qualifications. The successful applicant will be required to assist in the development of a new degree course in Clothing Studies. Experience necessary in designing and pattern cutting, etc. for industry, and previous teaching experience would be an advantage.

The post is required to be filled by 28th September, 1982, or as soon as possible.

Salary Scale Lecturer A - £7,956 to £12,581 (bar at £11,700).

Further details and application forms available from: The Principal, Scottish College of Textiles, Giffeshield, Selkirkshire TD1 3HF (Telephone 0898 3351). Completed application forms should be submitted within 2 weeks of the appearance of this advertisement.

**CLASSIFIED ADVERTISEMENTS**

To advertise in the **THES**

Phone Jane McFarlane on 01-637 1234 ext 7692

The Times Higher Education Supplement  
PO Box 7, Gray's Inn Road, London, WC1X 8EZ

# Don's diary

## Sunday

With two years of BEU students out on teaching practice and the other two committed to the presentation of practical work, it will be a week without teaching, but hardly a restful one. I prepare by taking seriously, for once, the injunction which regularly heads my weekend job-list: REST. A lazy morning: *The Observer* and a little light housework to the comfort of an obligate of *The Archers*. Lazier afternoon: mainly sleep. Then cooking, most therapeutic of crafts, and a small drama game of *Go*. As usual, start by thinking I am at last mastering the game and end squeezed into a corner, John in possession of most of the board.

## Monday

Vast quantities of post turn out to be mainly unexciting, though necessary, responses to requests for teaching practice places for next year. Still, one of these is backed by a delightful personal letter from an ex-student of two years back, clearly well established in her school. Later, interviews with third-year students about the fourth honours year. Under the three-plus-one design of our present degree we have open access with counselling to the fourth year, which leads to some uncomfortable conversations with the few students who have every right to stay on but might be better advised to do otherwise. The new four year only honours degree we are piloting through Council for National Academic Awards validation procedures will remove this problem and, no doubt, substitute others. Late in the afternoon, I go to a local school to see second year students show a programme called *Utopia*, related to the school's choice of *A Man For All Seasons* as an examination text. Marvel at the way this has gained force and focus since the stumbling run I saw last week.

## Tuesday

A wearisome administrative day. A filing session which only makes a small impression on the paper mountains which regularly accumulate in my room followed by long discussions with colleagues. One of these is so long I have no time to snatch a snack before an evening meeting of the governors of a local primary school, and disgrace myself by eating two thirds of the biscuits provided. After all, the other governors live locally and have eaten. Since we last met the school has won the local road safety competition and suffered a couple of minor road accidents; one of life's little ironies. We discuss the authority's plans to deal with falling rolls in secondary schools and lament the deplorable state of education. As I leave and get on my motorcycle it is just starting to rain.

## Wednesday

An early start to accompany the external examiner to visit a first year student whom I have been tutoring in primary school. Relieved to find that he does not think my swan a goose. She has 36 juniors in the hall, plus their regular teacher, trying to resolve some of the problems of being stranded in small groups on a desert island. Their commitment is intense. Then back across London, trying to dodge the Chelsea Flower Show, to attend a meeting of heads of department. The main business is not academic but social. Our much-loved house manager is retiring and we are planning her leaving party - the sort of thing she usually organizes herself for others. To my great relief, a meeting of the London University special advisory committee on drama planned for this afternoon has been cancelled, so I have some breathing space before setting off for the Drama and Tape Centre for a committee meeting of London Drama.

followed by the AGM and a social evening at which Peter Newsam is given an engraved glass in thanks and farewell. Wine flows from boxes, not bottles, and a small drama group play scenes from *After Liverpool*. As I leave and get on my motorcycle it is just starting to rain.

## Thursday

Again at a school, this time secondary, accompanying a third year student's tutor as part of a standardizing exercise. The message that we were coming has failed to reach her but she takes swift action to restructure her lesson in such a way as to thrust us into it. Find myself investigating discrepancies in the books of an ailing store of which I have suddenly become managing director. Saved by the bell from my own inadequacies in improvisation. My colleague and I scrupulously avoid discussing the lesson, which would invalidate the exercise. Back at Central, follow my custom of years and buy a little tin of coffee. Devoured sweets for the fourth year students who are directing their own short plays. This evening is the public dress rehearsal. I can't see it until tomorrow, when in fact I shall be functioning as an internal examiner. I'm off to *The Bodley Head* to interview Betsy Byars, the children's writer, for *TES*. Good publisher's party follows. As I leave and get on my motorcycle it is just starting to rain.

## Friday

Advisory interview with prospective mature student. It becomes clear that the diploma in voice studies will meet her needs much more closely than the BEU so I reroute her to the course tutor. Finance committee meeting at lunch-time, looking at the distribution of next year's resources among the stage, speech therapy and teacher departments. It is an interesting exercise in keeping up your own end without acrimony. We all want a larger chunk of what's going, but we all understand the other departments' needs, and contrive to end the meeting in accord. Rush over to studio one to see the final performance of *Utopia*. It is pleasant to find students and staff from other departments among the audience. Struck by how beautiful all the girls look in headresses which expose foreheads and frame faces. After a Chinese meal, I see the assessment performances of the fourth year students' plays, seven of them, each lasting about quarter of an hour. There are three adaptations from a novel, a short story, a diary and four original pieces. The studio is transformed again and again to a dance floor, a kitchen, a garden, a psychiatric ward.

## Saturday

I've really had enough theatre for one week, but I can't miss a play written by one of my second year students being staged at the Lyric Theatre, Hammersmith. After all, he is two years ahead of the demands of the degree. It is lively and played by a large and vigorous cast of black and white youngsters; but like most plays could do with being shorter. On the way home, past eleven already, we find we are keyless. After 20 minutes in a phone booth chasing locksmith who promises a 24-hour service all over London but is incapable of delivering, we stagger to a nearby hotel and take a room for the night. Since we can get a key from a neighbour in the morning, we realize this is about £20 cheaper than getting the locksmith. There is a large television set in the room; so we can even get the last hour of *The Trial*. This runs the oven into Sunday morning. It's been a long week.

## Audrey Laski

The author is director of the teacher training course at the Central School of Speech and Drama, London.

Having just acted as external examiner for one honours degree and as chairman of the board of examiners for another, I have once more been revivifying doubts in my mind about the whole business, doubts which have been with me over many seasons during my university and polytechnic service.

Broadly, the honours degree is the product of experts seeking to create order out of chaos, economic and educational changes now bring. I think, the concept into question.

The United States is the greatest scientific and technological country in the world, but its inventiveness and dexterity are not nourished and supported by an honours degree. The first qualification there is a general degree, giving the student a wide intellectual experience. Depth begins to come in with the Master's degree for which those of proven aptitude are recruited. At the summit is the PhD, (with its ancillary taught courses) for the most committed and the most able, who will be in their turn the advanced researchers and teachers.

In the US, too, industry and commerce are built upon a system of in-service training; the means of extending their knowledge is regularly available to employees at whatever level. The knowledge acquired on a degree course in an applied subject will always need supplementation and revision as new discoveries are made; sooner or later much of the original knowledge will be virtually antiquated. Constant 'recycling' of personnel will be the pattern more and more in the future. It takes all the running you can do to stay in the same place.

Further, what real point is there in categorizing an engineer, say, in the now traditional manner? People wish to be assured that the man who designed the bridge they are crossing has been properly tested and licensed by competent authority. But is this profession to classify his certification? Modern conditions will compel the person who wishes to remain in the profession to go on refreshing his knowledge and understanding, and so why distinguish candidates at the outset? Each one of us is a different person in each decade of our lives. A First at 21 or 22 does not guarantee that its possessor will go on growing in mind and spirit, nor does a Third inevitably mean that the person is an academic 'write-off'.

The need for retraining has arisen in

## Education for Adults

Plugging the gaps in profits



Charlotte Barry

The new advisory council report *Continuing Education: from policies to practice* has been billed as the most important in the field since the Russell report was published nearly 10 years ago. Unfortunately for Russell, his carefully thought-out framework for 'expansion' (which was not simply 'expansion' but 'expansion of the same sort') has been replaced by the new wave of aesthetic spending cuts. 10 judicious remarks made by Sir Keith Joseph, the Secretary of State for Education, several weeks ago at the National Institute for Adult Education conference, the advisory council report is in danger of falling down the same slippery

## Is the idea of 'honours' out of date?

most careers and it will grow. The whole shape of professional work, and indeed of work at large, has been and is undergoing great change in our western world. A first qualification will recede into the distance as a career proceeds. The question will be "What are you doing?", not "What have you done?"

My attitude covers non-vocational subjects as well. With general comprehensiveness at the secondary level of education, what is more fitting than to have it at the tertiary also? A degree in whatever subject is no longer the "meal ticket for life" it once was. As, too, higher education has been democratized in this country and so expanded, the number of natural generalists has increased; there cannot have been any substantial growth in the number of higher education while the numbers in being made to do too much, I fear, and it is a considerable body of people it is that 20 years ago when the University of London, where I then worked, abolished its long established general degree in arts. I protested that this was a retrograde move; the pattern, for a start, which education in schools was beginning to assume suggested that entrants to the teaching profession would be better accommodated if they possessed such a qualification. It is a melancholy pleasure to note that I was right. The majority of honours candidates fail, I suspect, somewhere into the lower second bracket (and this labelling of them cannot do much for their inner view of themselves). Is it realistic to continue trying to maintain the old rigorous standards when only a few are able to meet them, and when there is actually no need for this kind of ordeal anyway?

I am most emphatically in favour of learning about the world in which we can encourage them to flourish. The honours degree system as we have received and operate it is a catastrophe, a mangle through which we insist on putting our

students whether or not it fits their background and training, their requirements and purposes in the contemporary world, and (not least) the best interests of learning or scholarship.

Today, a broad approach to a degree level seems desirable in the vocational and non-vocational fields for sound, pragmatic reasons. Polytechnics, with their philosophy of flexibility and applicability, are in the right location for this kind of training and education. The self-styled high-flyers would go on to the Master's qualification, and the gifted survivors of that stage could proceed to higher studies. I am sure that "By being more flexible it is possible some students may start with courses with which they find it hard to cope. Some will drop out; not a few of the universities might believe, to become polytechnics, thus, in fact, be more useful to the degree as a test of character than a punitive element. It is our purification at work again. I am sure accreditation and certification of everyone should be able to have a statement to produce to potential employers or exactly what he has done, and with what results; the idea should "fail" someone who has reached the third year of his grotesque, for he must have had merits and virtues to have got to that point.

Let us by all means reward achievements, though they may be technically add up to whatever is currently by our concept of a qualification, so that they are creatively count towards the stage, wherever and whatever they be. Let us try to be more positive in the way we offer assessment of their worth to our students. The honours degree means several respects outdated. But a level system of school examinations was established to maintain and we do some way from reaching in the required radical way. How could start at the top and work down, however?

## Henry Macl. Cl...

The author is head of human resources at Teesside Polytechnic.

were making a profit. The advisory council report out the course of adult continuing education until the end of the century. It proposes a radical emphasis in the post-school sector provide a comprehensive system of continuing education for the post-16 years.

A new strategy on education for adults is desperately needed, and Sir Keith's do it yourself approach is wrong. Since the big spending cuts three years ago rising unemployment, changes in working patterns and the new technology have all created an enormous challenge for the futuristic kind of liberal adult education that always seemed to serve the public so well.

It is a familiar picture, but all the same, adult education has failed to come to grips with the problem in a consistent way. Adult educators have tried their best and come up with some good ideas, but it has all been piecemeal and haphazard, with uncoordinated and hamstrung by outdated regulations and official attitudes. To be fair, the Department of Education and Science has not helped by failing to realize the need to expand the vocational and training element of education for adults. The result has been a steady proliferation of agencies in different Government departments all overlapping and often acting at cross purposes.

Hence you have the Open Technology Training Initiative (the Manpower Services Commission) overlapping with PICKUP and the Open University (the DES). At the same time as the DES provided £1m to help more unemployed people study at the OU, the Department of Health and Social Security was enforcing the 21-hour rule to prevent people who receive benefits from studying. While local authorities were encouraged to make adult education classes self-financing, the Customs and Excise were trying to levy VAT on them because they

## LETTERS TO THE EDITOR

### Preparatory courses for mature students

The obviously unintended calumnies and isolationism of part of Blackstone's article ("Pull down the Barriers of Learning" *THE TIMES*, June 4) was astounding because it totally contradicted the intention of the article, namely, to provide educational opportunities for mature students. She calmly states that "By being more flexible it is possible some students may start with courses with which they find it hard to cope. Some will drop out; not a few of the universities might believe, to become polytechnics, thus, in fact, be more useful to the degree as a test of character than a punitive element. It is our purification at work again. I am sure accreditation and certification of everyone should be able to have a statement to produce to potential employers or exactly what he has done, and with what results; the idea should "fail" someone who has reached the third year of his grotesque, for he must have had merits and virtues to have got to that point.

### Bedford College

I sympathize with members of Bedford College, London, who are normally daunted by the prospect of moving to Egham. But I am comforted by the prominence given in your columns to the views of a party of the Bedford College arts faculty in its passionate opposition to the merger with Royal Holloway College. Its assessment of the subjects is, in fact, based on three conceptions. I will deal with each in turn.

A United Royal Holloway and Bedford College may not attract students in arts subjects because of the distance of the Egham site from the centre of London. This may have some force if it were the case that 753 arts students at Bedford College were sub-standard. They are not: in terms of A level grades and results in typical London students, this college has always attracted those who intend to read for a London degree and enjoy the advantages of a central but prefer to live in semi-rural surroundings. The expansion of the Egham site will certainly reduce residential facilities provided by the college, but it will still be largely adequate.

Intercollegiate teaching in arts subjects will be adversely affected. The most recent correspondent to the history had not yet been fully reviewed, the implication

### quity at Warwick

In his letter (*THE TIMES*, June 11) Ronald Tress, Director of the Industrial Relations Trust, says that "A real feature of Lord Rothley's report on the SSRC is that he gives to Lord Beloff's report on the Industrial Relations Trust at Warwick with no reference to the continuous support given by the unit by the Leverhulme trustees. It might be thought, however, that additional funding provided as the first fundamental organizing arrangements, the 1944 Education Act should be rewritten to cover the needs of adults as well as young people, contain a comprehensive plan of continuing education for the place a duty on local authorities to provide a varied and balanced programme."

The recommendations are tant and far-reaching, but they deal with a type of education with a low status. They will have little impact. They will be passed back with a bland endorsement of support, emphasizing that initiatives are welcome provided they do not come out of the public purse. "Continuing Education: from policies to practice", available from the Advisory Council for Adult and Continuing Education, 19B Deodar Street, Leicester LE1 7DE.

### The shortest first

Sir - Can anyone tell me the author by Tuesday morning. They should be as short as possible and written on one side of the paper. The editor reserves the right to cut or amend them if necessary.

most of whom, by definition, have been out of formal education for some years - have the opportunity gradually to prepare themselves and test their own motivation and aspirations in a protected situation on a course designed to meet their needs in a local institution of further education. In this way they can be allowed to develop the appropriate study skills and communication skills, be given an introduction to some disciplines and, progressively, define or refine their own educational, vocational and personal aspirations. If, from these courses, tailored to their specific needs, they still drop out or choose alternatives to higher education, they will not have failed or lost their grants but will have gained in confidence and understanding of themselves because the course can be designed for those purposes.

There is a little substantial experience to draw on in this country of such preparatory courses, for instance, at Sunderland Polytechnic, in

the North-West Open College and in the ILEA. It still surprises me that most universities, polytechnics and colleges of higher education - whose hearts may be in the right places - ignore the crucial necessity of their taking the initiative in collaborating with further education colleges or community schools/colleges to establish such preparatory courses. Perhaps, at least unconsciously, they still do believe that academic ability is innate in a limited number of mature students and all we have to do is to open our doors to those mature students only rather than prepare an increasing number of them to have the confidence, knowledge and ability to enter and succeed in higher education. Or perhaps they simply don't talk to further education colleges.

Yours faithfully,  
H. WEBSTER,  
Director designate,  
Edge Hill College of Higher Education.

difficulty, I am, in fact, in the enviable position of being only one hour from the British Library and Oxford bridge, which means that I am much better off than most academic historians in the country. And if settlement at Egham is so harmful to research, how is it that past year the 16 members of this department, together with a postdoctoral fellow attached to us, published 6 books and 16 articles?

I feel deeply for those whose lives are being upset, but the most vociferous of them are grossly exaggerating the difficulties and are in danger of misleading themselves and others.

Yours faithfully,  
JONATHAN RILEY-SMITH,  
Royal Holloway College,  
Egham, Surrey.

Sir - My statement "no one can afford to embark on a programme of expensive mistakes" with science provision and equipment in London (*Letters*, *THE TIMES*, June 11) was printed without the first syllable ("one can..."). It seems unlikely that this statement was deliberate editorial policy, but it does have the effect of upgrading the letter's starting-point from mildly tiresome to gratuitously unhelpful, so I would be grateful if this could be corrected before any further misimpressions arise.

Yours faithfully,  
S. P. GEMBROKE,  
Bedford College,  
London NW1.

ly concerned. In this university, for instance, one of our major engineering departments has for many years taken a significant number of less well qualified applicants, whose success as graduates in the employment market has been striking. In several social science departments, however, a similar policy taken with mature students from the inner city, again with noteworthy results; in modern languages, despite consistently high A level scores in the department as a whole, a dozen or so places each year have been reserved for students from inner-city schools, for precisely the social reasons to which your correspondents have alluded. All of these strategies have now been jeopardized by the UGC, by virtue of the way in which they have interpreted their misguided brief from the government, since we are all apparently to be judged principally by the A level scores of those students whom we admit. In my view, the social consequences will be disastrous - but the blame should be laid fairly and squarely at the door of those responsible.

Yours sincerely,  
Professor MARTIN HARRIS,  
Pro-Vice-Chancellor,  
University of Salford.

Letters for publication should arrive by Tuesday morning. They should be as short as possible and written on one side of the paper. The editor reserves the right to cut or amend them if necessary.

### Social work pioneer

Sir - Your readers will be aware of the death last year of Dame Eileen Youngusband, a pioneer of professional social work in this country and abroad. An appeal is being launched to set up a fund which, it is hoped, will maintain the tradition she established of scholarship, practical action and human compassion. Its aim will be to promote innovative studies, research and other activities which might contribute to the planning and development of social work practice and social work education and training of which were close to Dame Eileen's heart. It will be administered jointly by the London School of Economics, the National Institute for Social Work and the International Association of Schools of Social Work.

Besides Dame Eileen's contributions to teaching social work both at LSE and NISW, she was for many years chairman of Hammersmith juvenile court and was deeply involved with the reorganization of the probation service. She was the author of the three Carnegie reports on social work education and training. She contributed to the *Gulbenkian Report on Community Work* and she also chaired the Youngusband Committee on social workers in the local authority health and welfare services. Dame Eileen's international activities are equally noteworthy. She was vice president of the World Congress of Faiths and her work as board member, president and honorary president of the IASSW covered more than 30 years and extended to some 70 countries. She served as adviser to the UN and to governments, universities and national organizations overseas. For the last 30 years of her life she worked unflinchingly to improve social services and train social workers in the Third World.

One purpose of the fund will be to enable work students from the UK and overseas to undertake education and training at LSE and NISW. Another purpose is to assist the IASSW to carry forward Eileen Youngusband's international commitment to the continuing development of social work education particularly in developing countries.

We hope that Eileen Youngusband's friends in many walks of life will contribute. Donations should be sent to the Appeals Secretary at LSE, Houghton Street, London WC2A 2AE. Cheques should be made payable to The London School of Economics (Eileen Youngusband Memorial Fund). Contributions made by Deed of Covenant would be greatly appreciated and forms are available from the Appeals Secretary.

Yours faithfully,  
Edward Carpenter, Sean A. Corneley, Ralf Dahrendorf, Elliot of Harwood, M. S. Gore, George Haynes, Peter Hodge, Bob Holman, Robin Huws Jones, G. Godfrey-Isaacs, Israel Katz, Katherine A. Kendall, Vukani K. Nyirenda, Heinrich Schiller, Sebstom, Serota, Richard Spinae, Esther Viloria.

### OU loan service

Sir - With reference to your recent article on the Open University video cassette loan service (*THE TIMES*, May 28), I must point out that demand, although enthusiastic, has not 'outripped' supply. The scheme was established to cope with an estimated demand for 20,000 programmes. On the basis of the demand so far, this estimate has been revised down to approximately 14,000 programme recordings for the year.

Although it is extremely busy, the audio-visual department of the university is coping very well with this level of demand; on average each student request is being turned round in just over one day. The point about the loan service, which should be emphasized, is that the level of demand indicates that there is a viable alternative to repeat transmissions, at a time when the amount and quality of transmission time available for Open University programmes is being reduced.

Yours faithfully,  
STEPHEN BROWN,  
The Open University.

### Union view

## Thoughts on a formative six years

Next week after six years before the mast I'll finally walk out of Endsleigh St, the National Union of Students' London headquarters, and not return. I shan't leave with any regrets - a change is more than overdue. Nor is this going to be a personal and slushy piece about all the marvellous time I've had and people I've known. But while most people say the formative years are between the ages of one and six, I'm not sure mine haven't been between 21 and 27.

I first went to college at the time of the miners' strike and the downfall of the Heath Government, a period now obscured on the left by an optimistic nostalgia that hopes for some kind of miraculous repetition of those events. In the next few years, although Denis Healey waved the axe at the education system, there was a major debate about the expansion of education. James Callaghan launched this great debate at Ruskin College and NUS began to emerge from its purely reactive phase and plunged into discussions on 16-19 education, higher education into the 1990s and continuing education.



The Oakes committee took the first bite at the reorganization of public sector higher education teacher training and overseas students suffered in this period. This was more than made up for by the possibility of education maintenance allowances and the more exciting concepts that lay behind the inception of the Youth Opportunities Programme.

Four years later all this has turned to dust in our mouths. We have regressed from Shirley Williams, through Mark Carleton to Sir Keith Joseph, whose desire for consultation is epitomized by the fact that he is the first Secretary for Education for 20 years that NUS has not met formally. Progress is laid aside; opportunities squandered and the seeds of vast social conflicts in the future are sown. The self-confidence and morale of education service and the hundreds of thousands of young people in it are being destroyed.

Nevertheless, my experience of the student movement over the last six years allows me a little more confidence. In our expert-ridden and unself-sufficient society I've seen 25,000 different student union officers participate in doing things for themselves. In that period several hundred thousand young people have been involved in the democratic process through their student unions.

At its best the student movement is intelligent, humorous, and idealistic. It is, for example, the meeting of 700 16-18-year-old further education students discussing the Government's education policy and the need for more discos in the same breath. As an impression this more than outweighs the more newsworthy antics of Tony Trots and right-wing Tories with their anti-human messianism and intolerance.

NUS has changed enormously in the last few years. It has a greater capacity to adapt to changing needs than any other organization I've ever come across. In the difficult and exciting times that lie ahead for my successor I'm sure that at least two things will remain constant. The first is that NUS will be a genuinely radical force in British society. The second is that to be its president will always be both a privilege and an education.

David Aaronovitch  
The author is outgoing president of the National Union of Students.